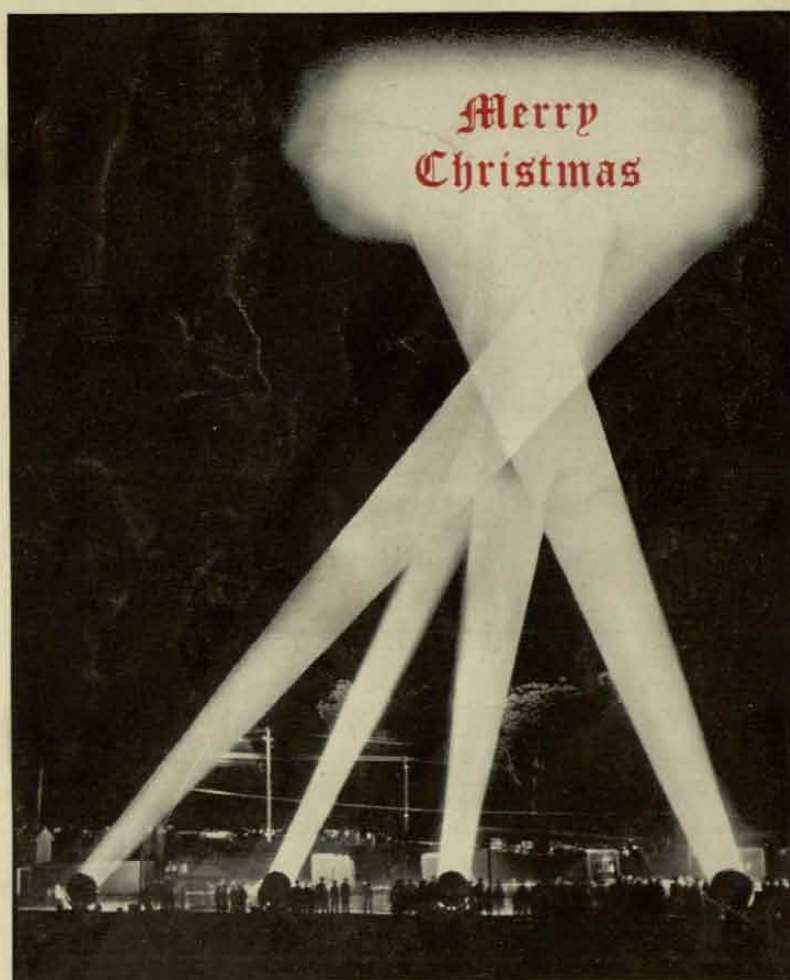


COAST ARTILLERY JOURNAL



November-December, 1933

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LIEUT.-COL. E. E. BENNETT, C.A.C., Editor

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Notes of the Coast Artillery Association

Annual Election of Officers

UNDER the provisions of the constitution of the United States Coast Artillery Association it is necessary to hold an annual election of officers. The constitution provides for a total of nine elective officers and it has been so arranged that the expiration of the term of office of five of this number expires on December 31, 1933. Officers are elected for a period of two years, therefore, it is readily apparent that the Executive Council is a rotating body with four or five new members elected on alternative years. This is a wise provision and operates for a continuance, rather than a change of policy which would probably result in case the personnel of the Council should be completely changed at stated intervals. The officers whose terms of office expire are as follows:

Colonel H. E. Cloke, C. A. C., Vice President

Colonel R. E. Mittelstaedt, C. A.—N. G.

Lt. Col. T. A. Scott, C. A.—Res.

Major F. S. Clark, C. A. C.

Major S. S. Giffin, C. A. C.

The Executive Council as now organized contains two members of the National Guard, two members of the Reserves and five members of the Regular Army. The constitution further provides that "at least five elective officers shall be Coast Artillery officers on active duty." It is considered desirable to maintain the proportionate number of representatives of the several components of the Army as now organized.

In order to properly canvass the field and prepare a slate the President of the Coast Artillery Association appointed a nominating committee to place before the Association the names of officers to replace those whose term of office is about to expire. There is no shortage of officers especially well qualified to serve as members of the Executive Council. The problem confronting the committee was not to find suitable candidates but to select those who could be easily assembled for the transaction of business. The proposed slate is as follows:

Vice President: Colonel H. E. Cloke, C. A. C.

Additional members of the Executive Council:

Colonel Harry H. Morehead, C. A.—N. G. vice

Colonel R. E. Mittelstaedt, C. A.—N. G.

Lt. Col. Harry P. Newton, C. A.—Res. vice Lt. Col. T. A. Scott, C. A.—Res.

Lt. Col. W. T. Carpenter, C. A. C. vice Lt. Col. F. S. Clark, C. A. C.

Lt. Col. E. E. Bennett, C. A. C. vice Major S. S. Giffin, C. A. C.

While the above slate has been placed in nomination it should be remembered that no member of the Association is to be deprived of a voice in the nomination of officers. If you do not approve of the committee's choice there is not the slightest objection to entering

your personal choice on the ballot in the space provided for that purpose. Printed ballots will be distributed throughout the service about December 1. It is urgently requested that all members of the Association exercise their franchise in the selection of the Executive Council which will be responsible for forming the policies of the Association for the next two years. For reasons of economy it is not contemplated to mail ballots individually to each member of the Association. Ballots will be distributed through regimental and post commanders, national guard instructors, unit instructors of the organized reserves and other similar agencies. It is requested that individuals accomplish the ballots and return them to the agency from which received where they will be collected and forwarded to the Secretary of the Association. In the event that a member should fail to receive one of the printed ballots it will be entirely satisfactory if he records his vote informally and forwards it to the Secretary, or if so desired the sample ballot as shown below may be used.

The United States Coast Artillery Association Ballot

FOR VICE-PRESIDENT (1934-36)

☐ Colonel H. E. Cloke, C.A.C.

Vice Colonel H. E. Cloke, C.A.C.

FOR MEMBERS OF THE EXECUTIVE COUNCIL (1934-36)

☐ Colonel Harry H. Morehead, CA-NG

Vice Colonel R. E. Mittelstaedt, CA-NG

☐ Lt. Col. Harry P. Newton, CA-Res.

Vice Lt. Col. T. A. Scott, CA-Res.

☐ Lt. Col. W. T. Carpenter, C.A.C.

Vice Major F. S. Clark, C.A.C.

☐ Lt. Col. E. E. Bennett, C.A.C.

Vice Major S. S. Giffin, C.A.C.

Fill in names of your candidates if so desired.

☐

☐

Signature

Rank and Organization

Address

INSTRUCTIONS AND INFORMATION

1. Vote for only Vice-President and four (4) members of the Executive Council. The above list is the slate prepared by a nominating committee to replace those members whose term of office expires on December 31, 1933.

2. Record your vote by making an "X" in the appropriate square or indicate your choice by writing in the name of your candidate. Ballots received with signatures, but no individual votes recorded will be considered proxies.

3. Each candidate was considered in connection with the geographic location of his residence and also the component of which he is a member. It is considered advisable to have at least five members of the Council resident in Washington in order to facilitate transaction of business.

4. No member is to be deprived of a voice in the nomination and selection of the new members of the Council. If you do not approve of the Committee's choice, enter your personal choice in the space provided.

5. Ballots received after January 6, 1934, will not be counted.

6. Mail ballots to The Secretary, U. S. Coast Artillery Association, 1115 17th St. N. W., Washington, D. C.

United States Coast Artillery Association Trophy Awarded to the 529th C.A. (AA)

HOW often have we heard the expression "Out West where they do things in a big way." A westerner is always a strong booster for that section of the country, perhaps there is some foundation in fact for this exaltation. At any rate, in the north-western part of the United States, or to be more specific, in the State of Oregon, a group of interested, energetic, zealous, hard working, Reserve officers certainly have done things in a big way so far as piling up credit hours by means of extension school work is concerned. Statistics are often unreliable and figures can be made to tell almost any story, but sometimes it is possible to anchor them to the bed-rock of fact and then defy the world to prove that they are wrong. This group of 28 Reserve officers, commanded by Lt. Col. M. W. Hawkins of Portland, Oregon, and under the able tutelage of Colonel William H. Monroe, C. A. C., piled up a total of 2391 credit hours by means of completed extension school sub-courses during the school year ending June 30, 1933. This is an average of 85.39 credit hours per individual. Thus far in our computations we are on solid ground and the facts can be substantiated. We wonder if some statistician will not go farther and figure out how many kilowatt hours of electrical energy were consumed and how many hours of sleep were lost in establishing this fine record. The computation might be carried even farther to show the number of pencils worn out and the reams of paper used up. We will leave these things for others to determine and confine our computations to bare facts. Sufficient it is to say that the United States Coast Artillery Association takes great pleasure in announcing the 529th C. A. (AA) the 1933 winner of the trophy. Incidentally this trophy will be a replica of the one awarded to the 955th C. A. (AA) last year except for a change in the designation of the unit.

Perhaps it may not be amiss to mention that the strength of the regiment was taken as of December 31, 1932. This date is believed to be the fairest to all concerned. The strength at the beginning of the school year could not be used for the reason that it is likely to change materially during the course of the year. Also, many newly appointed officers are assigned to regiments during the month of June. Of course these officers had no opportunity to participate in extension school work, therefore, it would be manifestly unfair to take the strength as of June 30.

The nearest competitor for the trophy is the 507th C. A. (AA) commanded by Lt. Col. R. L. Cochran, who hails from Lincoln, Nebraska, while the personnel of the regiment is widely scattered in the States of Minnesota, Iowa and Nebraska. The unit instructor of this regiment is Captain T. R. Phillips, C. A. C. whose office is located in Minneapolis. The Headquarters of the regiment is Des Moines, Iowa. This regiment with a strength of 29 piled up a total of 2408 credit hours or an average of 83.03 hours per member.

Their record of accomplishment is no less noteworthy than that of the winner. We only regret that there are not two trophies to be awarded, but such are the accidents of service and the fickle will of fate. To this regiment goes all the honor and all the credit, which is within our power to bestow, for a job well done. The regiment has given ample evidence that its members possess the sterling qualities of enthusiasm, industry and perseverance. They ran a good race and the mere fact that they were nosed out at the tape by another regiment does not detract in the slightest from their record of performance. This is especially noteworthy because of the fact that the personnel of this regiment is so widely scattered that the unit instructor has no opportunity to establish personal contact, hold conference or other similar meetings. All contact is by means of correspondence.

The third honors go to the 514th C. A. (AA) which hails from the great state of New York. This regiment, under the command of Major N. E. Devereux, piled up a grand total of 5354 credit hours. The strength of the regiment was 67, therefore, the average per member is 79.91 credit hours. The unit instructor is Major J. C. Haw, C. A. C., with headquarters in Schenectady. The same ranks as made above in referring to the 507th apply equally as well to the 514th. Our hats are off to all of these, we cannot say more; we could only reiterate what has already been said.

Inasmuch as the subject of this award has aroused such wide interest and enthusiasm we believe it desirable to publish the compilation of the data to include the three highest organizations in each Corps Area.

Regiment	Strength	Total Number of Credit Hours	Average Number of Hours per Member
<i>First Corps Area</i>			
904	47	1572	33.45
618	11	317	28.82
616	32	907	28.34
<i>Second Corps Area</i>			
514	67	5354	79.91
619	35	1877	53.63
533	34	1579	46.44
<i>Third Corps Area</i>			
508	116	4169	35.94
503	96	3343	34.82
913	87	2334	26.82
<i>Fourth Corps Area</i>			
922	46	1203	26.15
524	100	1925	19.25
540	84	1457	17.34
<i>Fifth Corps Area</i>			
932	21	663	31.57
505	69	1194	17.30
535	37	636	17.18
<i>Sixth Corps Area</i>			
531	57	4044	70.94
950	23	1323	57.52
949	19	906	47.68
<i>Seventh Corps Area</i>			
507	30	2408	80.27
955	99	4664	47.11
537	133	3875	29.13
<i>Eighth Corps Area</i>			
969	18	1011	56.17
973	26	1146	44.08
972	26	1076	41.38
<i>Ninth Corps Area</i>			
529	28	2391	85.39
605	23	1373	59.69
977	68	3525	51.84



Greetings

With a full appreciation of the difficult conditions under which personnel of the Coast Artillery of the Army of the United States has functioned during the present year and having in mind the commendable progress made by all ranks during the year in preparing themselves for their wartime mission, it gives me great pleasure to extend to the officers and enlisted men of the Coast Artillery of the Regular Army, the National Guard, and the Organized Reserves the Season's Greetings and Best Wishes for a Happy and Prosperous New Year. ' ' ' ' '

JOHN W. GULICK

Major General.

Extracts from the Address of Maj. Gen. John W. Gulick

Chief of Coast Artillery, delivered at the Army War College, 1933

I PROPOSE this morning to discuss briefly and in a general way the subject of Antiaircraft Artillery with special reference to its organization and employment.

Upon the reorganization of the Army under the provisions of the National Defense Act of June 4, 1920, the Coast Artillery Corps was charged with the operation of antiaircraft artillery including antiaircraft guns, antiaircraft machine guns, and antiaircraft searchlights. Unlike all other types of artillery, practically no worthwhile antiaircraft armament was available from the World War since the late inception of antiaircraft artillery had made necessary the utilization of improvised weapons, equipment and methods. This situation demanded the initiation of a program of intensive development to be undertaken by the arms and services concerned; namely, the Coast Artillery, the Ordnance Department, and the Corps of Engineers with the assistance and cooperation of the Air Corps.

The most effective antiaircraft weapon available at the close of the World War was the 3-inch antiaircraft gun, M-1918, on a trailer mount. About 120 of these guns remain on hand at the present time. This gun has a muzzle velocity of 2400 f.s., a maximum vertical range of approximately 15,000 feet (limited by fuze) and a rate of fire of about 15 rounds per minute. The ammunition provided consisted both of high explosive shell and shrapnel, the projectiles being equipped with a powder train time fuze. The fuze was set by a hand fuze setter similar to fuze setters used in the Field Artillery. In addition to the low muzzle velocity and rate of fire the gun and mount had other inherent defects.

The fire control equipment was more or less improvised, was inaccurate and crude as compared with present standardized equipment. Firing data were transmitted to the guns by telephone, computed elevation and azimuth were set off at the gun and the gun was pointed by the gun pointer following the target with a sight. With the best of this equipment and with well trained personnel considerable "dead time" elapsed before the firing data were utilized at the guns. The large amount of "dead time" (not less than 12 seconds) meant that it was necessary to aim in effect at a point far in advance of the target thus providing another source of inaccuracy if the plane did not continue in a straight line and at a constant speed, as well as showing up the rate of fire.

Antiaircraft machine guns available were caliber .30, with improvised mounts. Various types of sights were used but none were satisfactory. Tracer ammunition then available was unsatisfactory and approximated the ball ammunition trajectory for only about 400 yards.

The searchlight in general use was a 36-inch light with unsatisfactory auxiliary equipment to assist in

following an aerial target. The power plant was in the truck carrying the light. The sound locators available were crude and unwieldy.

The program for the development of antiaircraft artillery materiel was initially directed towards the elimination of inaccuracies, slowness and the lack of range of the war time materiel. These objectives have in general been obtained but as would be expected in such a transition the requirements of greater range, speed and accuracy have had a tendency to create considerable weight in materiel and complexity in instruments. Progress in development, however, has been along logical lines and the perfection of certain refinements was a necessary step in the transition. We are now in a position where we can proceed with the simplification of our materiel and in fact are already doing so, although the lighter and simpler equipment is not yet in production.

* * * * *

Our present standard fire control equipment for antiaircraft guns includes as the main elements a height finder, a director and means for transmitting electrically the firing data from the director to the guns where pointers are matched to keep the guns properly laid, and the continuous fuze setter set. Under this system "dead time" has been eliminated practically and we can deal with rapidly moving and maneuvering targets.

The standard sound locator is far different and much more efficient than were those of war time production. For accurate location of distant planes it must be situated in a quiet place and must be operated by highly trained personnel who have been selected after special tests of hearing. Tests have shown that there is a great range in the capacity of human beings in accurately locating a sound source and that individuals with the desired capacity are limited in numbers. With the progress which has been made in silencing airplane engines, it now appears that it will be necessary to supplant or supplement location of sound by other means. Sound locators and the detection of airplanes offer a special field for investigation.

* * * * *

With the development of armored bombardment planes and the tendency towards tactics similar to the "hedge hopping" type of attack used by attack planes, it has become apparent that there is need for a weapon intermediate between the 3-inch antiaircraft gun and the caliber .50 machine gun. The difficulty of fire control with the 3-inch antiaircraft guns firing upon swift, low flying airplanes, and the probable inability of the existing antiaircraft machine gun firing a non-explosive projectile to put an armored plane out of action, except by a large number of hits, are the conditions which indicate the necessity for the development of an automatic or semi-automatic weapon firing

a high explosive projectile capable of inflicting vital damage on a plane with a small number of hits.

* * * * *

The antiaircraft regiment was designed to provide the antiaircraft defense suitable for the corps. Consideration has been given to proposals to provide antiaircraft artillery in the division, but, in my opinion, for good and proper reasons it has been decided that there will be no organic antiaircraft artillery with the division. When a division is acting alone and requires antiaircraft artillery, a suitable amount would be attached to the division from the corps regiment. While I doubt very much the sufficiency of the single regiment in the corps, in view of the matériel situation, I do not believe it is practicable to urge at the present time an increase in the antiaircraft artillery now assigned to the corps. A study of this matter made at the Coast Artillery School resulted in the conclusion that the organic antiaircraft artillery of the corps should be a brigade of two regiments, an ammunition train, and a brigade headquarters and headquarters battery. I concur in this conclusion and hope that when our antiaircraft matériel and equipment situation is improved, the antiaircraft artillery component of the corps will be increased to a brigade of two regiments. Army antiaircraft artillery will be brigaded, the brigade to consist of two or three regiments according to the needs of the particular army; the normal component is a brigade of three regiments.

In determining suitable organization for the antiaircraft artillery regiment, there had to be taken into consideration the tactical employment of the regiment under radically different conditions. The corps regiment, with a corps operating in the theatre of operations, requires an organization making it adaptable to covering the corps in attack, in defense, or on the march. Infantry and artillery components provide their own antiaircraft machine gun protection, but the following corps units are without such protection:—

- Corps headquarters and special troops,
- Corps aviation,
- Corps Engineer, Quartermaster, and Medical Service,
- Field trains of the corps artillery.

For protection of establishments in the Zone of the Interior, which would be subject to attack by aircraft, antiaircraft regiments assigned to the defense would ordinarily be the only troops performing this mission, unless the importance, extent, and location of an establishment required in addition the presence of defensive aviation. I believe that assignment of air units for this purpose would be most unusual as such dispersion would greatly weaken our offensive air strength.

Considering these diverse uses, the organization of the antiaircraft regiment is necessarily a compromise, unless we resort to two types of regiment, one for use with corps and higher echelons in forward area defense and the other for rear area defense, such as that for establishments in the Zone of the Interior. In general, for rear area defense a greater number of searchlights and machine guns is needed.

The primary mission of the gun batteries is to attack the bomber. With the great increase in speed of this plane, as recently developed, it appears that our gun defense will have to be extended. To do so with our existing three batteries of guns in the regiment would be at the expense of necessary volume of fire over the establishment, area, or units covered, and would therefore be most undesirable. With modern antiaircraft guns it is generally desirable for proper concentrations of fire to have the batteries not more than 6,000 yards apart. To retain ability to concentrate fire over the area protected and to take under fire sufficiently early the fast moving modern bomber, the addition of one gun battery, making four in the regiment, appears necessary. While the shortage in guns and their necessary adjuncts, directors and searchlights, remains so great, there is no necessity for early action toward effecting a change.

The present regiments make up a reservoir of matériel; as more guns become available the existing regiments will be brought to strength, after which, with more guns forthcoming, necessary reorganization can be effected. Studies on a suitable reorganization are in progress, and when the matériel situation permits, definite recommendations for reorganization will be submitted.

For antiaircraft protection in the Combat Zone, under the diverse conditions of advance, attack, and defense, I shall outline only a few broad principles.

In the advance, gun batteries cover by an area defense critical localities along the route of march, such as defiles and river crossings, also corps and army establishments not moved, and the marching columns. To maintain this defense, batteries are marched forward by bounds by one of the following routes:—

- Suitable interior roads between columns,
- Protected exterior routes on flanks of columns,
- Same as marching column (just in rear of the advance guards is a good place for leading gun batteries),
- Cross country when necessary.

When contact is imminent, it is highly desirable to place leading gun batteries in the interval between the advance guard and the main body. This limits observation over the heads of the columns and provides protection for the assembly areas of the combat troops when the development begins.

In the attack, the gun battalion of the organic corps regiment covers the main effort of the corps, the reserves, and the artillery which follows in close support of the attack. Its most important function is to prevent the effective use by the enemy of observation airplanes. The relatively lesser width of the corps front in attack and the fact that the corps combat elements are concentrated well forward permit the location of the antiaircraft gun batteries on a relatively narrow front and well forward with the advanced batteries near the divisional artillery. Advanced positions not only afford better protection for troops concentrating for the attack but avoid the necessity for an early displacement forward. In the attack, forward batteries

will usually be located from 1,500 to 3,500 yards in rear of the line of departure.

In the defense, forward gun batteries are located about 2,500 to 4,500 yards in rear of the main line of resistance. Protection is normally provided in the following order of priority:

Troops resisting the enemy, especially those resisting the hostile main effort;

Reserves and their routes forward, including their probable zone of action;

Airdromes;

Supply establishments, including dumps and distributing points.

Service and field trains;

Railheads;

Command posts.

During May, 1933, a series of Joint Antiaircraft-Air Corps Exercises were carried out in the vicinity of Fort Knox, Kentucky. These exercises were designed to develop and to test the tactics and technique of anti-aircraft artillery defense against aerial attack, with and without the cooperation of pursuit aviation; to investigate the employment of the distant intelligence net in cooperation with Air Corps units assigned defensive missions; and to test and to develop the tactics and technique and equipment of the Air Corps in the attack of an objective in the Zone of the Interior. These exercises were highly interesting and instructive. It was made plain from the beginning to those charged with planning and conducting the exercises that one fundamental idea should be kept in mind, namely—that the exercises were not maneuvers, that the different arms and services were not in opposition to each other but all were engaged in a common cause for the benefit of the Army and of the country. In order to promote this idea, the control of the exercises was vested in a Director (a general officer representing the Corps Area Commander) and a suitable staff. The conduct of the exercises was intelligently planned and was marked by a fine spirit of cooperation among all of the elements concerned.

The intelligence net is an important adjunct in a defense such as that contemplated at Fort Knox, particularly for warning defensive aviation. The commercial telephone lines and central stations were used to great advantage in the net and the civilian operators

participated effectively with limited training and with little interruption to routine duties. The observation posts were manned mainly by personnel from the 10th and 11th Infantry and 1st Cavalry. The net functioned effectively throughout the exercises and clearly demonstrated that personnel can be assembled and trained rapidly for such service. Under the priority system used, flash messages were received from the most distant stations, nearly 150 miles away, and made available to the defense elements within two minutes. Valuable data were determined as to a suitable organization and the personnel required for an intelligence net.

The success of the exercises was due in a large measure to the intelligent manner in which the offensive air operations were conducted. The large number of planes employed in these exercises included some of the latest types of great speed and provided with means for reducing motor and propeller noises. The Air Corps has given considerable study to anti-aircraft defense and employed some novel and interesting formations and maneuvers in attacking ground objectives. I believe that the progress of our Air Corps in operations of this nature is far ahead of that of any other air force. In addition various methods of camouflage were tested as well as the use of smoke in various forms.

The comprehensive reports which have been rendered on these exercises are now being studied in the War Department and it is perhaps premature to draw conclusions as to many questions raised during the exercises.

* * * * *

It should be kept in mind that anti-aircraft artillery is our most recent activity and while substantial progress has been made since the World War there remains a large field for further investigation, study and experiment. In my opinion, our organization, equipment and methods are not stabilized. Anti-aircraft artillery development must keep abreast with aircraft development. This demands that there must be the closest cooperation between the Air Corps and the Antiaircraft Artillery. We must have more and frequent exercises such as the Fort Knox Exercises in the future.



ABILITY TO RUN is nothing; what counts is power to destroy with immunity, as far as practicable, against new forms of attacks. Fleabiting tactics never led to success.—NAVAL AND MILITARY RECORD (France).

The German Intelligence Service During the World War

By Baron Guido Errante

IN recent times, particularly in America, we have seen an almost extravagant outpouring of so-called war literature. While official historians of the various staffs are laboriously building up still confused facts of the great tragedy, popular fancy likes to see the events with a romantic background. To the innocent minds of a new generation the martyrdom of men, who fought against death for many long years, every hour of every day, is represented as a joy and an exaltation, or as a terrible and useless punishment.

A subject about which the imagination of ignorant writers has had the widest field for expansion, is that of espionage. We have been overrun with improbable and puerile tales, wherein beautiful, perfidious and astute ladies, with incomparable finesse and poisoned kisses, extract the most vital secrets from diplomats and generals.

The truth is very different. The romantic spy, sacred to legend and tradition from the Napoleonic era, has now almost disappeared. That infamous species, abounding during the great war, was very democratic and not at all brilliant. Suffice it to recall that the class of persons, regularly employed, and forming the vast number of operators, were recruited from soldiers of low rank, commercial travelers, smugglers, small merchants, mountebanks, etc.

An authentic history of espionage during the years 1914-19 can never be written. The methods employed, the individuals enrolled, the results obtained are veiled in mystery. Documents pertaining thereto will certainly never leave the archives where they are filed. But it is possible today for anyone, who was part of the Intelligence Service of one of the belligerents, to reconstruct the general lines of the great enterprise without betraying any secret.

The organization of the Service, which functioned perfectly in Germany even before the war, was created by the staffs of the Entente armies only during the conflict. Obviously, therefore, to give an exact idea of the innumerable ramifications and of the technique of the Service, it is advisable to describe the intricate network of the German system, passing over the others, improvised at the beginning of hostilities, and which, almost to the end of the war, served more for purpose of defense than of attack.

The inadequacy of the Entente's organization is illustrated by this anecdote. I remember at Berne, one night in March, 1918, that the head of a department in the Allied Information Service awoke his Italian colleague from deep sleep, because of some newly arrived "important" and "urgent" information. A trusted agent, returned from scouting in enemy terri-

tory, he said excitedly, had received exact data about a large scale offensive which the Austro-Germans intended to launch against the Italian front that April. Gorizia was to be the objective! Yet Gorizia, since October, 1917, had been some twenty miles inside the Austrian lines! I remember the kindly smile and the affable manner with which the Italian Colonel showed his colleague the actual situation of the troops on a large wall map, and the latter's fury at having paid hard cash for the trusted informant's pretended journey.

Gradually, however, the Allied Services, and especially the French, were able to build up an efficient organization, particularly for the defensive work of counter-espionage, and were finally able to discover the network of an enormous German spy system.

Let us pass over the Austro-Hungarian service briefly. It was affiliated with the German one, and although it enjoyed a much older and more famous tradition than the latter, was but poorly prepared for military purposes. In fact, for decades its organization had been completely absorbed by the Foreign Ministry for political purposes and by the Ministry of the Interior for police purposes. Consequently, the Austro-Hungarian espionage assumed, during the war, a predominantly political character. In this field, it was very competent and it supplied what was lacking in the German organization.

The German General Staff organized the Intelligence Service in a scientific manner, without fantasy or romance, but with the most vigilant, careful and frequently the most humble and patient work. Every minute part was studied in detail, and each connecting link was organized with mechanical precision.

One of the most difficult tasks of the German Secret Service heads was, naturally, the recruiting and training of spies. A special class of agents, generally made up of petty officers unable to go to war, took care of that. Their position required them to work among the deserters and the interned. All internment camps, not only in Austria and in Germany, but also in Holland and Switzerland, were the scene of continual search. Deserters were plentiful, especially in Switzerland. Outside the law and because of their moral predisposition to treachery, they were an easy prey to the inducements offered by enemy Intelligence Services. Their knowledge of their own country and of the war zone in which they had been stationed made them potentially good material.

Exact information is at hand concerning the compensation allowed for decoying the spies into the service. After an initial payment, varying from 500

to 2,000 francs, fifty francs daily were given to the travelling personnel of inferior position. Then a fixed sum of from 500 to 5,000 francs was paid for each journey, where the services were of an ordinary nature. For extraordinary services, the compensation was apt to be much more, the highest reward being reserved for the terrorist agents. There was an established rate, for instance, for sinking ships, the amount fluctuating from 300,000 to a million francs, according to the type and efficiency of the vessel.

It has been possible to collect a good deal of information on the terrorist attempts which took place during the first years of the war, particularly in Italy, after Italian counter-espionage ascertained that the center for planning such attacks was located at the Austro-Hungarian Consulate in Zurich. It was there that one of the most brilliant coups of which the Entente Services could boast was conceived and executed. On the last night of the Carnival in 1917, two sailors from Italy were smuggled into the offices of the Austro-Hungarian Consulate in Zurich, located in the very center of the city. There they blew open the safe, extracting from it voluminous and very valuable information, which they entrusted to a faithful messenger, who before dawn made his way to Italy. From the documents we obtained at that time, we were able to recognize the latest acts of the enemy, including the recent destruction of the dreadnought "Leonardo Da Vinci" in an Italian port; to identify many German and Austrian spies, to take adequate measures for apprehending them in the act and to adopt all possible means of defense.

Neither the interned nor the deserters, spies by compulsion, were ever used on missions of trust and confidence and they always remained in a low grade of the service. The choice of reputable agents presented even greater difficulties and had to be based on still other means. One method generally used, especially in neutral countries, was the insertion of a newspaper advertisement offering well paid employment for men and women knowing foreign languages and willing to travel. There appeared in the "Algemeen Handelsblad" of Amsterdam, in November, 1916, an advertisement for a person of Dutch nationality, willing to travel abroad for some weeks. Subsequently, it was discovered that the advertisement had been inserted by a German, manager of an industrial organization at Utrecht. The intention was to send the Dutch applicant to Italy. There he would pretend to be engaged in buying and shipping raw materials needed in construction work. In reality, however, he was to tour the ports of the Tyrranean Sea, forwarding to a Swiss address given him upon his departure news of the movements of Italian ships.

The recruiting of high grade type of agents was preferably conducted where national sentiment was not involved and there was no fixed political opinion on the war issues, in milieus where the prospect of entering the service of a foreign power might appear picturesque and romantic, even to honorable people. In order that the temptation to enter the service might be greater, recruiting in such countries was not in-

frequently directed by persons high in the diplomatic service. Operations of this kind were successful chiefly in countries far from the theatre of the war, such as America, Scandinavia and Japan. The candidate, selected from the upper classes of society, was the recipient of liberal favors and attentions and was treated as a political aide, equal to any other. Invited to dine, introduced to persons occupying high positions and leading luxurious lives in palaces adorned by the coats of arms of sovereigns, received by a crowd of secretaries and servants, the dazzled new recruit was generally won over completely.

Agents speaking Serbian were much in demand, above all in Austria. Many Croats and Czechs were able to travel freely in the Entente countries, passing themselves off as Serbian refugees, supplied as they were with Serbian passports, for which, (before the invasion of Serbia) the Austrian service paid as high as 10,000 Kronen each.

Once the agents were recruited, it was necessary to instruct them before they could be used. For this purpose, the Germans had organized real schools, functioning admirably. After the invasion of Belgium a school of this type was established at Antwerp, located in a fashionable section of the city. Directly opposite was a public toilet, the matron of which was a German, charged with watching the house and anything suspicious that might go on in the neighborhood. The school was directed by a major and various officers taught there, but the most important member of the faculty was, strange to say, a beautiful Norwegian girl. She spoke many languages fluently, and was very active and very intelligent. The clients of the house used to call her "Fraulein Doctor". The initiation of recruits to the service was attended to with infinite precaution. The new agents were not permitted to see any of their future colleagues, nor to be seen by them. They were introduced directly into one of the many rooms in the school, each one of which, marked with a letter of the alphabet, was dedicated to a special group of agents.

It has been impossible to ascertain on what basis a countersign was given to each candidate. It is apparent, however, that the letter designating the room frequented by the particular pupil, together with another letter (indicating probably the country of origin) and the number of matriculation, formed the sign afterwards attached by the pupil to his reports in lieu of his name; for example, L.S. 52, F.A. 54, etc.

The beautiful Norwegian first ascertained by an examination the capability, culture and memory of the new recruit, and then assigned him to a course of study, varying in length according to the results expected, or the tasks which she wished to allot to him. For one or two weeks the scholar spent several hours of the day before maps and colored tables, representing uniforms of the enemy armies, models of warships, types of dirigibles and airplanes, etc. He then proceeded to study the particular matters which were to form the subject of his investigation; numbers and kinds of troops stationed in the locality to be visited, armies and their distribution, names of the superior

officers, electric plants, telegraph and telephone lines, etc. The agent had to learn by heart detailed and specific questionnaires on all these matters. Particular attention was given to everything pertaining to munition plants and to the transportation of troops. The agent's reports in this line assumed the proportion of veritable monographs. The mere list of possible subjects was long enough in itself, but each one of them contained besides a series of subdivisions constituting a real and systematic treatise on the matter. On the subject of troop transportation the questionnaire was interminable. In order to enable the pupil to judge the quantity of moving troops, he was trained to note the minutes which a column takes to traverse a certain distance in all possible formations of march.

The technical course was accompanied by a general and psychological one. In every report the agent was required primarily to refer to things he had seen and to reply to three inevitable questions: How? Where? When? Referring to things seen by others, he had to state if these third parties had or had not been eye-witnesses, and to give a biographical sketch of these outsiders.

He was absolutely forbidden to take notes from newspapers or magazines. In order to invite others to confide important information, pupils were instructed to invent something very sensational in the course of conversation and to invest it with an air of great mystery. They were directed also to pretend, if possible, ignorance of a language, so that they might overhear the conversation of others. They were finally instructed that it was more satisfactory to ascertain a half dozen facts than to listen to a hundred opinions.

The course at the Antwerp school, necessarily brief, lasted from four to six weeks. When it was finished the agent was given a specific and limited task, involving a very short journey, and he was instructed to

return immediately, after having completed his work, for new orders. Such a system was most efficient. These missions, although not producing long general reports, were none the less useful for the purposes of the service, for the information centers had constantly on hand small problems, whose solution was of immediate and urgent necessity.

For example, when the submarine U 29 was sunk, many agents were sent through France and England to find out how the disaster occurred, what happened to the commander, and what system the English would adopt for the capture of submarines. When the presence of English submarines in the Baltic became known, other agents were charged with establishing how they had found a passage from the North Sea into the Baltic. During the battle of Verdun it was the task of various agents to ascertain what changes had been made in orders to munition factories.

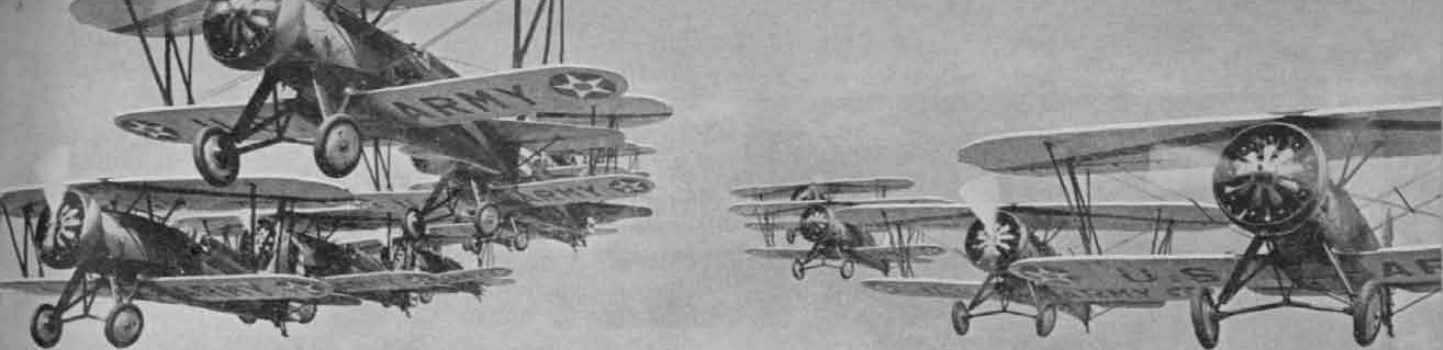
In this way, by clearly limiting the scope of the inquiry to specific objects, it was possible to obtain correct information and at the same time to prevent the spy from being evasive and from giving general and inaccurate data—a possibility which the service heads feared more than any other.

The candidate left school on his first mission equipped with a personal countersign for identification, which might be useful with the police. From that moment the agent began to be active within the orbit of one of the information centers of the service, scattered along the frontier or abroad. His direct contact with any central organization ceased almost completely.

The recruiting and training of spies was, it is apparent, conducted by the Germans methodically and uniformly. They knew how to give a scientific turn to their system, distributing the various branches all over the world, and adapting their function and importance to the nature and progress of military operations.



WITH PROPER WISDOM the Army Council has until now decided that it would be unwise to begin mechanization on a large scale even if money was available, as it was realized that each day brought modifications in vehicles that made yesterday's machines obsolescent and even obsolete. That period has now passed, and if today there was a proper sum of money available production could begin at once. The completely experimental stage has passed.—LONDON TIMES.



The Role of Defensive Pursuit

PART I

THE NEXT GREAT WAR

By Captain Claire L. Chennault, Air Corps

Photo by U. S. Army Air Corps

FOREWORD: The author of this series of discussions received valuable assistance in the preparation of Article III from the Report of the Commanding Officer, Defensive Air Force, Joint Antiaircraft-Air Corps Exercises. The expressions of opinion and comments throughout the series of articles represent the author's individual views, and are not reflections of the views held by any other officer or school.



IN the past, upon any given date, the characteristics of the next war could be determined fairly accurately by a close study of the last war. The next war began where the old ended and progressed by routine stages to a finale marked by the destruction or dissolution of the military machine of one belligerent.

The invention of new weapons and the introduction of new methods for employing both old and new weapons during the progress of a war often influenced the final decision. Still the war formula was practically stereotyped. First, a period of international distrust ending in the breaking off of diplomatic relations, and open declaration of war; second, the invasion of hostile territory by armed forces; third, the conflict of maneuvering armies and navies; fourth, the decisive defeat of the armed forces, accompanied by the occupation of the capital and principal industrial centers of one nation; and fifth, the peace conference and treaty. Quite often the people themselves were little concerned with the war being waged by their armies and navies. The individual citizen clearly understood that he had no part in either the making of a war or the peace conference; wars were made by the rulers and were fought by soldiers and sailors; the mass of the people contributed nothing except additional tax money and human material for the draft.

Looking back from 1933 to the World War of 1914-1918, the military student is impressed by certain radical changes in the stereotyped form. Beginning in the usual way, the World War changed suddenly from one of moving armies and navies into a static land conflict with rival armies deadlocked in trenches extending from the sea on the west to neutral Switzerland on the east.

The widespread use of small caliber, rapid firing arms lent greater strength to the defense; general offensive action could be undertaken only with a vast preponderance of men and matériel and at frightful cost. Maneuver was impossible; neither flank could be turned and penetrations were costly and relatively short.

The superior Allied navy quickly interrupted the sea-borne traffic of the enemy and then took up the long laborious watch which never resulted in a decisive naval engagement. The powerful German fleet retired into protected waters and prepared for a gigantic naval ambush which never materialized. The submarine, a comparatively new weapon, was employed in a new way and became of such importance as to threaten the continuation of England's great power in the war. With foodstuffs and raw materials diminishing rapidly, England locked her great fleet behind impenetrable submarine defenses and fought the submarine menace from destroyers, the concealed ports of "Q" boats, and from the decks of armed merchant vessels.

Victory could not result from the conventional movements of the military machine; soldiers, sailors, guns and ships alone could not win the war; the people of the warring nations became involved; even the aged, the infirm, and millions of women engaged directly in military work. The closing phases of the World War witnessed a war of populations. Germany's allies, with



Photo by U. S. Army Air Corps

An aerial smoke screen over Sacramento. Toxic chemicals might be substituted for smoke in this scene.

a weaker national structure than the central power, collapsed one by one. The final scene, the Armistice hour, revealed a condition without precedent in history—the capitulation of a numerous, well-trained, organized army in position largely on foreign soil, and the surrender of the second most powerful fleet in the world. A new factor had entered into the ancient formula for war.

A new phrase was coined to describe this new factor in international conflict. "National Resistance" or "The Will of the People to Resist," while not wholly unknown in the past, assumed a new importance. It must receive a great deal of weight in any consideration of the factors which will influence the next war.

The military student who attempts a forecast of the nature and characteristics of the next war founded upon the strategy, tactics and technical developments of the World War will do little more than arouse a storm of argument. Certain phases of the World War can be used to prove almost any pet theory. Nevertheless, there are a few broad generalizations which may serve as bases for an excursion into the future.

Among these, the most certain is that the next great war will absorb all the resources of the nations involved. All classes of the population will have both a direct interest and a personal concern in the prosecution of the war. Wealth and industrial facilities, as well as human material, will be drafted. Populations deep in the interior will be exposed to danger from the air as they have never been exposed in the past. Thus, the people of the nations will be acutely conscious of danger and the national will to fight can be assailed directly by the enemy.

Costly mistakes may be avoided by a true and correct evaluation of the technical developments which have occurred since the close of the last war.

The victory will be won by that nation which first succeeds in breaking the national resistance of the enemy. The will to resist of a people can be destroyed most effectively by destroying their means of resistance.

The next great war may be decided by conflict on land, on the sea, or from the air against the surface.

A war on land must resolve itself into a static conflict similar to the last one, for the very weapons which forced stability in the World War will be improved and distributed in greater numbers. Troops cannot exist in the open when subjected to the fire of relatively weak forces armed with automatic weapons. Some movement of tanks and other mechanized vehicles may be possible but the employment of heavier rapid fire weapons such as the .50 caliber machine gun and 37 mm. cannon will greatly restrict this movement in the main battle area.

War on sea, considered alone, will follow in general the lines of naval employment of the World War. While the superior battle fleet can restrict the movement of the inferior fleet, the superior fleet will not be able to prohibit the operations of hostile submarines and aircraft at sea. In fact, both fleets will find it imperative to defend themselves against attacks from both submarines and airplanes at all times. Likewise the merchant marine of the nation with the superior fleet will be assailed by both submarines and aircraft. Aircraft with long radius of action may be found to be far more effective in controlling seaborne commerce than are surface vessels. In the past there has never been a major naval engagement more than one hundred miles from shore; in the future there will never be a major naval engagement within operating range of a land based air force.

Thus a war confined to surface operations may be expected to follow the general outline of the World War. It will be a long, laborious conflict, ending only when the resources of one nation have been exhausted. No quick blow by surface forces can be expected to destroy the enemy's means or desire to resist, particularly since the power of the defense has been increased so greatly by technical developments of recent years.

However, no one believes today that the next great war will be confined to surface operations on land and sea. Every great nation of the world is today looking forward to a war from the air—some with hope, some

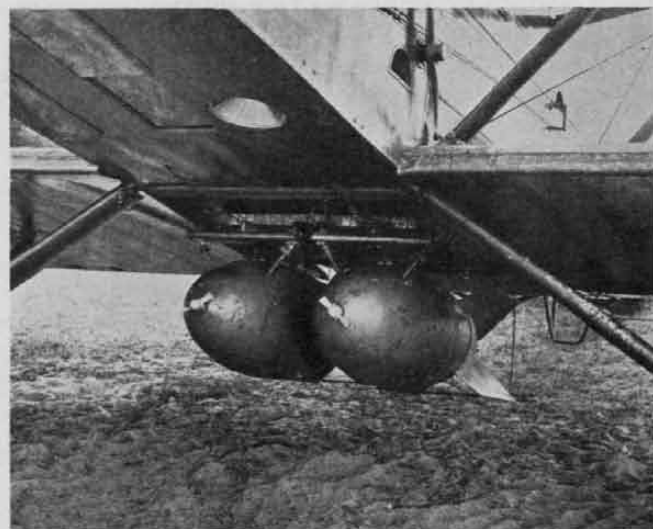


Photo by U. S. Army Air Corps

Bombardment "Fire" Concentrated in Large Doses.

with doubt, and many with fear. Every nation is preparing for that war.

It is generally realized that the air weapon is capable of greater technical development than is any other known weapon. Even since the close of the World War, airplane speeds have been doubled and ceiling, load capacity, and radius of action greatly increased. Accessories such as accurate bomb and gun sights, aerial machine guns, effective bombs and accurate fuzes, navigation instruments and power plants have been improved to an amazing degree. Aerial tactics and employment, which received little consideration during the World War, have been studied assiduously since the close of that war. The new arm offers the greatest possibility for unpreparedness because of a lack of appreciation and true evaluation of its technical elements and an accurate conception of its tactical and strategical power.

Military authorities of all nations are agreed upon only a few facts in connection with the employment of the air weapon in the next war. It is accepted that it will be employed early and vigorously. Practically all experts appreciate the value of the aerial offensive; very few have any real conception of the defensive. The following questions are being asked all over the world: Should the air force be composed wholly of offensive type (bombardment) airplanes? Should the air force be balanced (composed of airplanes of all types with the numbers of each type bearing a certain ratio to each other)? Should defensive (fighter) types predominate? Of what value are ground gun defenses against aerial invaders? Can ground gun defenses be neutralized by supporting aircraft during a bombardment raid? Can fighter craft intercept and defeat hostile raiding aircraft with any degree of certainty?

The very fact that these questions are being asked, and that intensive efforts are being made to arrive at approximately correct answers to them, is indicative of the universal desire to evaluate truly the importance of the air weapon.

Another fact upon which all authorities agree is that static conditions on land and sea will not restrict aerial operations. No line of trenches, no geographical barrier and no type of fixed fortifications can bar the operations of aircraft moving in the three dimensions of space. The aerial weapon can be applied directly to the national resistance of the enemy's population, as well as to his means of resistance, before surface forces gain contact and after surface forces attain a static condition. The action of the aerial weapon is more personal and will affect the morale of an entire people more directly than is the case with the action of any other weapon.

While the action of the aerial weapon is characterized by lack of continuity, the use of modern bombs with fuzes ranging from "instantaneous" to twenty-four hours "delay," or the use of persistent chemicals, removes this disadvantage.

The success of the Royal Air Force in controlling the mandate of Iraq offers a perfect illustration of the effect of aerial action upon the morale or will-to-resist

of a people. Operating against tribes with a widely scattered population living in caves; with no centers of industry, wealth or population; with no established routes of communication or lines of transport; it is a matter of record that every rebellious tribe voluntarily capitulated within a very short time. It has been generally accepted that the subjugation of a scattered population devoted to pastoral pursuits and inhabiting a rough, mountainous country with numerous natural caves offers the most difficult objective for an air force. The Royal Air Force detachments assigned the missions of subjugating rebellious tribes had but one factor in its favor—the ability to operate freely without effective resistance from the enemy. This one factor proved of supreme importance and completely overbalanced all the factors favorable to the tribesmen. This same factor may prove to be of decisive importance in the next great war. It is of such importance that the subject "Effective Resistance to Hostile Aerial Operations" should receive deep study and means and methods of resistance developed to the fullest extent.

Resistance to hostile aerial operations must be planned and fully developed during peace times. Due to the speed and range of aerial operations, as well as to the direct application of the aerial weapon to national resistance, victory will depend upon the ability to resist, neutralize and counter the enemy's initial aerial effort. There will be no time after the declaration of war for the development or even the manufacture of weapons of defense.

Looking forward now with the benefit of World War experience and with a knowledge of technical progress since 1918, we are able to perceive, dimly perhaps, the general nature of the aerial action in the next great war. It appears certain that it will be initiated with a vigorous, concentrated offensive effort of the air forces of one power, at least. No war will be begun until one power or combination of powers is assured a considerable superiority of air force.

With respect to the exact nature of that aerial offensive, the military student should study the writings of airmen and the reports of peace-time maneuvers. These documents indicate both the trend of opinion as to strategy and tactics and the state of physical preparation of the nations of the world. Technical progress is reflected in a measure by changes in tactics.

Prominent among peace-time writings are three articles by General Douhet (1869-1930) of Italy. These articles bear the titles: "Probable Aspects of Future War," "Mastery of the Air," and "The War of 19—." They have been translated into French and published in one volume by the journal, *Les Ailes*, under the title, "La Guerre de l'air."

Every military student should read this volume. The political leaders of this nation should study it, as the political and military leaders of France have. Regardless of the reader's personal views, General Douhet's doctrines illustrate a startling development of the aerial offensive. That General Douhet's doctrines are considered seriously in Europe is evidenced

by the nature of the Italian air maneuvers for 1931 and 1932, the British air maneuvers for 1931 and 1932, and the reorganization of French military aviation. The Italian air maneuvers emphasized Douhet's doctrine, governing the employment of successive masses of bombardment; the British air maneuvers stressed defensive measures against hostile air attacks; and the French air service was made a separate branch and given independent powers and responsibilities.

Briefly stated, General Douhet advocates the concentration of all aeronautical effort toward the accumulation of an enormous number of bombardment airplanes. These airplanes have considerable range and great load capacity and are disposed on airdromes so as to facilitate their employment in a number of columns. At the moment when hostilities begin, the leading masses of some eight different columns cross the border. Each column is directed against one or more important areas and is so arranged that successive masses of bombers follow each other in column at periodic intervals.

Hostile defensive weapons are not prepared to deal with successive masses of close-flying bombardment formations penetrating at wide intervals along the whole border and prove ineffective. Both defensive pursuit and ground guns are soon exhausted and can offer no opposition to the invading bombers.

The ground army of the aggressor nation takes up defensive positions along the border and, employing modern automatic weapons, prevents the invasion of the more numerous hostile army. After three or four days the people who have survived a reign of terror produced by the unopposed bombardment of centers of industry, communications, and population lose all desire to fight and sue for peace—on any terms.

Whether an entire nation can be conquered by bombardment is a debatable question, but it is certain that the ability of a nation to wage war can be impaired if not wholly destroyed by an enemy who is able to employ, without opposition, a vast number of bombardment airplanes against factories, lines of communication, mobilization centers, centers of wealth and population, and harbors. A nation deprived of the means for waging war will not maintain the desire to fight very long.

Intelligence reports indicate that every nation in Europe is accumulating an enormous force of bombardment airplanes. No nation has wholly abandoned pursuit yet, but more and more attention is being paid to the development of the offensive weapon. Apparently, European leaders have accepted the principle that bombardment, once in the air, cannot be stopped. The ideal weapon, the dream of world conquerors, an invincible force, appears to have been discovered.

While we cannot subscribe to the European view, we should take full advantage of its peace-time revelation in order to be prepared for the next great war. Preparation for that war must consist of providing an effective defense against hostile bombardment as well as the provision of a counter striking force.

The trend of development and of opinion through-

out the world emphatically indicates that the next great war will witness the employment of vast numbers of bombardment airplanes. An attempt may be made to gain the victory by employing bombardment as the principal offensive weapon; in any case it is certain that bombardment will constitute a most dangerous threat, especially to a nation committed to a defensive policy.

It is impossible to construct a defense against a weapon unless the characteristics and limitations of the weapon are understood. In general, bombardment aviation is characterized by its long range, speed of action, and destructive fire. Against area targets, it is very accurate from reasonable altitudes. In the past, it lacked continuity of fire but this disadvantage disappears if delay fuzes or persistent chemicals are used. It may be concentrated in great masses capable of delivering a tremendous volume of fire within a very short period.

Among its limitations are the following: heavy bombardment requires large, well constructed airdromes; it cannot operate from hastily constructed or emergency fields; it requires relatively enormous stores of ammunition, bombs of all types, fuel and other supplies; it requires a numerous, well trained corps of personnel, pilots, bombers, radio operators, gunners and mechanics for effective operations; it cannot operate from extremely high altitudes with a satisfactory degree of effectiveness. Flight above 16,000 feet results in such human difficulties as air sickness, physical lassitude, intense cold, mental inertia, and navigational troubles.

Bombardment leaders today are teaching the employment of that weapon at ranges which are limited only by the fuel capacity of the airplane. The tactical range of any offensive force is definitely limited by the amount of resistance that can be opposed to it.

Another school of bombardment teaches the penetration at extreme altitudes, a fast diving attack and climbing withdrawal. This method of operation cannot be consistently followed because of navigational difficulties. Meteorological conditions on many days are unfavorable to accurate navigation at very high altitudes.

Still another school of thought teaches the general employment of bombardment at night. Night bombardment presents difficulties of navigation and results in greatly decreased effectiveness. Night operations at short ranges will undoubtedly be quite common but long range night operations will be rare. Flying a lighted airway at night is far different to making a long penetration over darkened, hostile terrain. The difficulties of navigation at night are greatly increased by the inability of the invading force to obtain reports of meteorological conditions over hostile territory. This lack of definite information of meteorological conditions proved a serious handicap to the effective operations of German aircraft against London.

The primary objective of defensive measures should be the destruction of hostile bombardment in any numbers from single airplanes to mass formations before

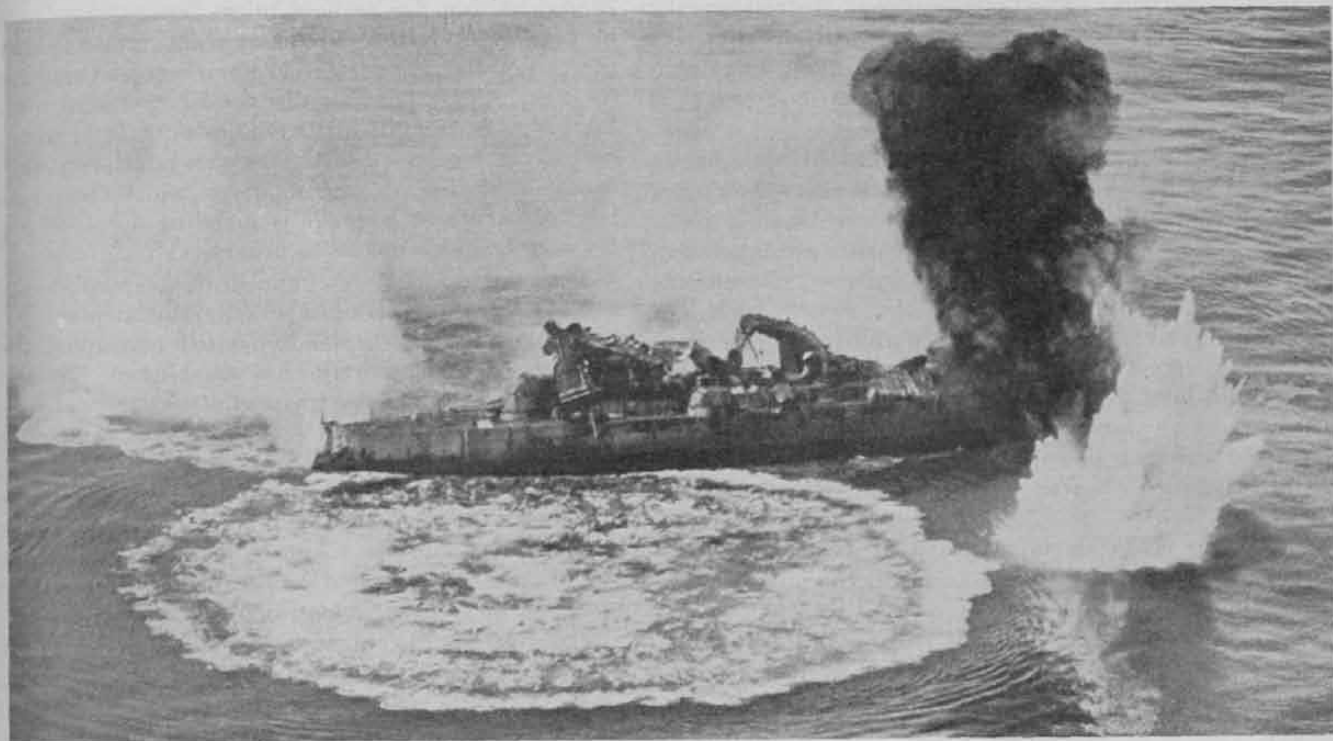


Photo by U. S. Army Air Corps

"There will never be a major naval engagement within operating range of a land based air force."

bombardment fire can be delivered upon the objective. The secondary objective should be the destruction of the hostile aircraft during the attack, the withdrawal and, by counter-blow, after the landing upon their own airdromes. Passive defensive measures should be calculated to neutralize or minimize the effects of bombardment fire.

At this point it would be well to consider the measures of defense planned by the same European nations who subscribe to the theory of the invincibility of bombardment masses. Germany, prevented by the Treaty of Versailles from developing military aircraft and antiaircraft artillery, has perfected in great detail an aircraft reporting and warning net. Information obtained from this net will be used to insure the maximum effectiveness of carefully planned passive defensive measures. Italy plans to use a similar information net to support the action of active defensive measures such as pursuit airplanes and ground guns, as well as purely passive measures. Passive defensive measures, including the sandbagging of valuable monuments and buildings, the action of sanitary and anti-chemical squads, and the operation of an ambulance service, have been worked out and are now prescribed in orders and regulations.

France has published regulations governing passive defensive measures in great detail. The French plan involves the piecemeal removal of essential factories, and their rebuilding in a protected, inconspicuous location. England has devoted its last two annual air maneuvers to the development and testing of its defensive system. The basis of the English defense system is its information net operated by a corps of

trained civilian observers. The maintenance of seventeen squadrons of pursuit in England indicates that the pursuit airplane will be relied upon to play an important part in the defense of the islands. However, ground guns, searchlights and balloon nets are also included among her weapons for defense. The ground information net is charged with the responsibility for furnishing timely intelligence of invading aircraft so that all these weapons may be used with maximum effect.

In a search of World War records for experience upon which to base sound conclusions as to the nature of an effective defensive system against hostile air attacks, we find little that is of value. In fact, the general average of experience during the World War indicates that Douhet's doctrine of bombardment invincibility is sound. It is a matter of record that invading bombardment was seldom stopped or even diverted from its target by active defensive weapons. The effectiveness of ground guns was especially disappointing. Colonel Rawlinson, who assisted in developing the antiaircraft defense systems of both Paris and London, and who commanded the antiaircraft artillery defense of London for three and one-half years, says that "Gun fire * * * must be considered as an ineffective weapon for purposes of defense against modern attack delivered through the air." He also stresses two points dealing with aircraft defense which were indelibly impressed upon him by his experience with the London gun defenses. They are:

"First: Neither London nor any other district can be successfully defended against air attacks except by means of adequate forces in the air.

"Second: The defense of any district against air attack should not only be carried out in the air but this operation should be undertaken at a considerable distance from the district which it is required to defend."

The tactical action of pursuit against invading bombardment aircraft flying in close defensive formation was likewise discouraging. Faced with a dual problem, first the interception of the hostile airplanes and, second, the destruction of those airplanes, pursuit was usually ineffective.

The problems which affect the ability of pursuit to make interception of hostile aircraft will be discussed in detail later. The reader who reviews the conditions under which pursuit operated during the World War, in the light of this discussion, will understand why pursuit failed so often to make interception of hostile aircraft.

Having made an interception of hostile bombardment by good luck or sheer accident, the pursuit force had but one weapon and one method of attack. This method required the closing in by a limited number of pursuit airplanes armed with one or two machine guns upon superior numbers of bombardment airplanes armed with four to eight machine guns each and flying so closely that mutually supporting fire was utilized to eliminate the approach in the blind area of a single bombardment airplane. The bombardment formation had such a superiority of armament that each attacking pursuit airplane was usually subjected to the fire of many guns.

The development of the .50 caliber machine gun and other special weapons which are specially suitable for use in a pursuit airplane makes it wholly unnecessary for the pursuit airplane to approach within effective range of the smaller bombardment weapons in order to deliver its attack. In fact, we have developed a weapon in this country which may make it impossible for bombardment airplanes to fly sufficiently close as to afford each other mutually supporting fire. So far as is known, this weapon has not been developed or used experimentally in any foreign country.

Improved tactical methods involving the employment of special pursuit weapons have reversed bombardment's former great advantage, the ability to deliver concentrated fire upon successive units of the pursuit attacking force. Pursuit, attacking from three directions, is now able to concentrate its total volume of fire while defensive fire from the bombardment formation must be dispersed in at least three directions.

Pursuit is no longer required to dive through concentrated fire in order to attain a favorable position for its attack. It can attack effectively from such ranges as will insure it minimum losses while inflicting maximum losses upon the defensive formation. A pursuit force of one group should now be able to destroy or turn back an unsupported group of bombardment within a reasonable time.

The pursuit airplane, defending against the invasion of hostile bombardment, has the further advantage of fighting over friendly terrain. A forced landing

caused by gun fire or mechanical failure may impose no penalty upon the pursuit airplane, while it means the end of the war for the bombardment airplane and its crew. There is also a distinct advantage of morale favoring the pursuit airplane; its pilot is fighting in defense of his own country, to prevent the injury or death of his friends and relatives, while the pilot of the bombardment airplane is invading a hostile country merely in obedience to orders.

Thus the technical development of weapons specially suited to the defensive arm, the pursuit airplane, combined with tactical methods devised to employ those weapons most effectively, has established for aerial warfare the well known principle that the defense is more economical than the offensive. The comparative costs of bombardment and pursuit airplanes add further weight to this principle. Four or five pursuit airplanes can be built for the price of one modern bombardment airplane. Approximately the same number of men are required to operate five pursuit airplanes or one bombardment airplane.

The relative fire effectiveness of pursuit *vs.* bombardment means little, however, unless the pursuit force can gain contact with the bombardment force *in the air*. A pursuit force of any number of airplanes is wholly ineffective if it is unable to establish and maintain contact with the invading force for such length of time as will enable it to destroy or completely disorganize that force.

The defending air force cannot occupy a defensive position and await the assault of the enemy. Failure has attended every attempt to maintain an effective pursuit force in the air at all times. Such attempts result in the exhaustion of the defending force with no commensurate return. After taking off, it is extremely difficult for the pursuit force to locate the hostile force unless the position of that force is revealed to pursuit at frequent intervals. The human eye is not accustomed to "seeing" in three dimensions even when meteorological conditions offer no concealment to the enemy.

All these difficulties, encountered during the World War and in all peace-time maneuvers since the war, led some of our military leaders to the conclusion that pursuit can never be effective for the denial of hostile bombardment.

This theory is the basis of General Douhet's doctrine of the mass employment of bombardment for winning the victory by offensive action of the air arm alone. If accepted, it establishes the unassailability and, therefore, the invincibility of bombardment. It establishes bombardment as the first exception to the ancient principle that "for every new weapon there is an effective counter weapon."

The error which led to this false conclusion could not be detected easily in the light of past experience. In fact, past experience persists in falsely naming "error," "truth." The error can be detected only when the causes which resulted in the failure of pursuit are carefully analyzed. While the numerous factors pertaining to pursuit action change with every

new situation, one factor has stood out prominently in every situation where pursuit has been employed in denial of hostile air action. This outstanding factor has been the lack of definite, continuing information of the hostile force. Every other military force engaged in operations requires definite, continuing information of the enemy. The failure to obtain such information has inevitably led to failure and defeat.

For some reason, possibly because of its slightly higher speed, it has never been considered essential to furnish pursuit with timely information of the enemy.

The normal order to the pursuit unit has followed this formula, "Ten enemy bombers were seen over XYZ at 9:00 o'clock. Take off and destroy them." It is now 9:15 and XYZ is only twenty miles away. When the pursuit unit returns and reports "no contact" it is considered indisputable proof that pursuit is ineffective for the denial of hostile bombardment.

We are now prepared to study the principles which determine the ability of pursuit to make interception of a hostile, invading bombardment force. This study will constitute the second article of this series.

(To Be Continued)

I Disagree

By Another Infantry Corporal, now 1st Lieut., Regular Army

EDITOR'S NOTE: The article referred to will be found on page 277 of the July-August, 1933, issue of the JOURNAL, under the caption, "Discipline, by an Infantry Corporal." Perhaps others have ideas on this subject; if so, why not bring them out into the sunlight where they have room to grow?

HAVING recently read an article in the COAST ARTILLERY JOURNAL by an Infantry Corporal—now Reserve Captain, I take this opportunity to disagree with his evaluation of the factors of leadership. From Infantry Corporal's letter as published at the head of his article I believe he served in the same division with me and I also believe that I could without much difficulty guess his company and regiment. Unlike this other infantry corporal I have devoted my entire time since the end of the World War to military studies and no small amount of this time has been spent trying to figure out the cause of the catastrophe which happened to us in the Argonne.

And now for an Infantry Corporal's article. In the first place he appears to assume that the enlisted men of his command will know more than the officers set over them; since he says that they will correct the mistakes of a popular officer. Any such statement as this must be based on the assumption that the men know enough to make such a correction. This probably would be the case in many parade ground drills, but certainly should not be the case in action.

An Infantry Corporal places technical knowledge last in the list of qualifications for an officer. I say it should be first because popularity and the other necessary qualities of an officer will inspire the confidence of his men and will cause them to follow him to hell if he will lead the way but any officer that leads his men to hell without knowing his way about when he gets there is a murderer. Having a conscience, I should feel very guilty if I thought that a single man had been killed because of insufficient knowledge on my part.

As to the attitude of the men themselves, how many of us have heard the remark, "Captain A is an S.O.B. but he knows his stuff and when we have a war I want to be with him?"

No, Infantry Corporal, you have confused the issue. You confuse drill ground leadership with battle efficiency and they are not the same thing. Many a good peace-time officer has proved worthless on the field of battle.



NOT ABILITY, but availability frequently dictates the choice of commanders.—
E. E. WILSON.

Post Exchange Operation—Some Suggestions and Remarks

By Major Lee R. Watrous, Finance Department

DURING the past four years, I have observed several Post Exchanges which had become heavily embroiled and entangled financially. Each entanglement was the cause of either suicide or dismissal or other public disgrace to trusted members of the military establishment; and, besides these resultant dishonors, there were large money losses which had to be refunded. In addition, boards of officers were occupied for long periods of time with the investigation of these catastrophes, time which should have been used for each officer's regular duties and tasks. The Post Exchange officers, in each case, were of average intelligence, hard working and conscientious, and not engaged in other duties, except an occasional "officer of the day" or "member of a court."

The outstanding causes of these catastrophes were irregularities in methods of money and property accounting and indifferent auditing, plus a system of operation which permitted peculations and thefts of supplies to continue too long before they were discovered. Unfortunately these conditions, which all agree should be eliminated, are still rather general if one may judge from the records of the Corps Areas and Departments. Having been a Post Exchange officer, I am making the following comments with the hope that they may help to improve conditions and thereby reduce the number of similar catastrophes in the future.

Common business sense is one of the prime requisites for an officer who manages a Post Exchange. In addition, he must have enough knowledge of bookkeeping to be able to apply correctly its principles in his daily check-ups; furthermore, he must give serious attention to the daily check-ups. He must study and analyze the exchange regulations, so he will know that he and all others concerned are complying with them. If at some exchanges compliance is impossible, he should make his difficulties known to the Commanding Officer and the Council and get a decision as to what procedure will be acceptable.

The above requisites become to a considerable degree incapable of fulfillment if an Exchange Officer cannot be at the Exchange at least during the greater part of office hours. Unfortunately this condition still exists at some of the smaller posts where Exchange Officers have other duties.

An officer detailed as a Post Exchange officer should think of himself as an owner of the business and from this viewpoint consider methods of checking that will prevent irregularities. It is well to understand that any system of checking, which reduces the possibilities of theft and fraud to the minimum, will require continuous vigilance. The minimum of possibility of theft can be attained if the accounting system is efficient

and if it furnishes the correct information at all times. There must be neither opportunity nor possibility to misinterpret or manipulate the various accounting entries; so it is necessary that the accounting methods discourage rather than create opportunities and possibilities of misinterpretation and manipulation. It is well to remember that every employee of the Exchange is entitled to a fair chance to be honest and, further, that an honest man does not resent checkups on his methods of conducting the part of a business entrusted to him. Regardless of the source of accounting errors, they are usually traceable to an employee who is careless, ignorant, or dishonest. However, the more difficult it is for a dishonest employee to cover his tracks, the less will be the danger of his stealing. The certainty of a relatively quick and automatic uncovering of a theft or defalcation is a very valuable deterrent.

In nearly all cases where frauds have been committed, whether by a steward, clerk or other employee, the testimony of investigations brings out the evidence that the wrong-doers were living beyond their pay, were gambling, were the victims of misfortune (death or sickness of a member of their immediate family which required an immediate extra outlay), or were naturally dishonest. It is necessary, therefore, for a Post Exchange officer to learn everything he can about the character, and the habits and manner of living of his employees; and, if he secures unfavorable information, he should act quickly and decisively and relieve the employee upon whom there rests a shadow of suspicion. Never fail to investigate carefully a change in the mode of living of an employee, if it involves increased expenditures.

From the foregoing, it may be seen that it is not enough for a Post Exchange officer to have only the necessary basic qualifications; he must also watch his employees carefully and, in addition, make certain that he has a simple accounting system which assures:—

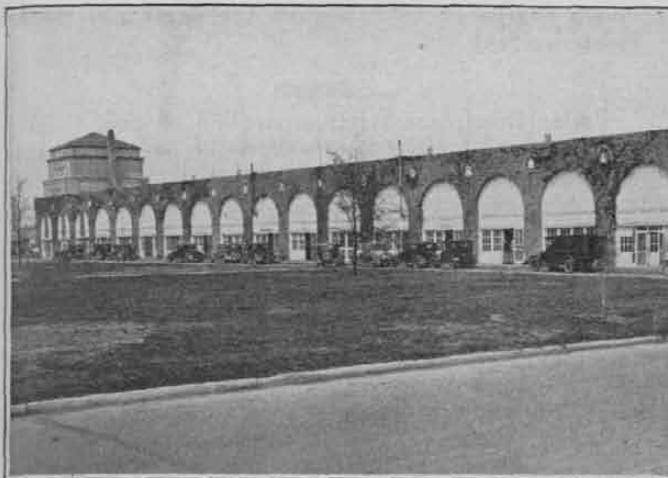
1. Accuracy of all records.
2. Definite responsibility for each division of accounting.
3. Speedy detection of dishonesty.

For purposes of accounting and operation, any Exchange may be divided into five sections:—

Buying.
Disbursements.
Selling.
Receipts.
Transfers (between departments).

Buying

Buying, in addition to the purchase of sale merchandise, includes labor, maintenance, and sundry expenses.



Left: Main Post Exchange at Fort Benning. The Offices are in the tower on the left. Right: Auto Repair Shops, Post Exchange at Ft. Benning.

It can be seen that the buying of sale merchandise requires careful consideration of the methods of recording, storing, and accounting. If an adequate, permanent, and true record of incoming merchandise is made, the chances of loss are greatly reduced. Once recorded, all goods and cash can be traced with ease through the records. The problem therefore is to devise a system which will make certain that "incoming values" will reach the records. Each purchase by the Exchange may be divided into three definite operations; placing the order, receiving the goods, and approving the invoice for payment. In most Exchanges, the Post Exchange officer himself can act in all of these operations.

The purchase order always should be numbered and in writing, with at least one carbon copy; in the larger exchanges, a triplicate or a quadruplicate copy may be necessary. A verbal order should be confirmed in writing. Right here it may be well to mention that the exchange officer should not delegate purchase authority to the steward. The regulations very definitely prescribe that this is the duty of the Post Exchange officer.

Provision should be made for counting the units received and for determining their quality. Even in the largest Exchanges, these operations can be performed in a very short time by the Exchange officer if the goods are laid out beforehand, in regular groups, by the storekeeper. It may be advisable to adopt the practice that packages will not be accepted unless an invoice has been received. No matter who checks incoming supplies, it is necessary that he actually count them; a mere check-off is not sufficient. The certificate, date, and signature (not initials) of the checker are placed on the "tally-in" slips. Of course, each lot of goods must be definitely identified with its specific purchase order. It is well to remember that a dishonest employee usually will attempt a theft or defalcation on incoming values.

After the incoming supplies have been properly checked and recorded, a verification of the invoice should be made previous to its approval for payment. The verification includes the checking of the purchase order number, the receiving date, the unit prices and

extensions, the discounts, and the F. O. B. requirements; only after these verifications, is the invoice approved for payment and its voucher given a number. The numbering of the voucher completes the three definite operations of placing the order, receiving the goods, and approving the invoice, which each purchase involves. These three operations should be handled in such a manner that they will give complete control over the check payment. The subject of check payments will be discussed further under disbursements.

After the supplies are properly checked in, there still remains the problem of preventing theft during their storage and issue. Whatever the stock system used, it depends basically on a thorough and careful monthly inventory. For this reason, I think a double inventory is advisable; that is, two independent inventories by two members of the council or an independent inventory by the clerks just before the inventory of the council member.

When one considers that the taking of a physical inventory is looked upon, often, as a necessary evil—an attitude which engenders carelessness—the need of a method which will assure exactness and accuracy is emphasized. Before inventory, be certain that all merchandise has been recorded, sometimes a shipment is received on the day of inventory and not included in the "accounts payable." All consignment articles should be listed in a separate group in the "stock record." The inventory of these goods is taken at the regular monthly inventory and the number sold during the month gives the basis of accountability. Handle these consignment articles as "accounts payable" with a notation that they are consignment accounts, so that no confusion will occur when a new Post Exchange officer takes them over.

Before leaving the subject of buying, attention is called to a subdivision which is an exact opposite, called by some a "purchase return." It refers to a return, by the Exchange, of goods rejected because of poor quality, damage, etc. These returns, together with the extra allowances given to the Exchange (soap, toothpaste and tobacco with volume orders—"drop shipments"), must be properly credited and debited.

Disbursements

Under the second section of Exchange operation; namely, disbursements, there must be considered not only those from the regular bank account, but also the ones from cash funds. Provisions must be made for a strict separation of disbursements for merchandise purchased from those for operating expenses. The various types of cancelled payments require careful analysis and consideration. For example, a check may be cancelled prior to mailing (either before or after its entry in the cash book).

Frequently the one who signs large numbers of checks believes he is too busy to give particular thought to the task—to enquire into the nature of the disbursements; he signs checks automatically. Before signing a check, a Post Exchange officer should be familiar with its nature. He should mark a voucher and accompanying papers so that the same papers cannot be used to support a second payment. A rubber stamp marked "PAID" with the date and check number has proved satisfactory.

As was mentioned under buying, every check issued should be definitely related to an approved invoice (voucher). This permits each transaction to be completely traced from the purchase order to the discharge of the liability, and prevents duplicate payments based on false invoices.

Selling

Under selling are included sales of every kind—cash, coupons, and charge accounts. A Post Exchange has to contend, at all times, with a salesman's failure to enter sales. A clerk may neglect to record receipts on the cash register, or he may ring up less than the amount involved in the purchase. Or in a system which makes use of sales books, some sales may be made without writing the sales slips. Furthermore, irrespective of what system of sales recording is employed, collusion with some of the customers may be going on. This is unfortunately of quite frequent occurrence and is very hard to uncover. However, these failures to enter sales are uncovered after an inventory if they reach undue proportions, and if an adequate and accurate stock record system is in operation.

The best method to prevent this type of theft, as well as the ordinary petty stealing by clerks, is to divide the sales store in departments. Then by keeping an accurate record of what is issued to each department, a shortage at inventory, if any, is definitely chargeable. Of course, no one but the clerk of a department must be allowed to have access to the supplies or receipts of his particular department.

Under selling, as with buying, there is a sub-division which concerns an exact opposite, this is sometimes called a "sales return." It is very necessary to provide for the receipt and record of returned goods or over-charges and to give the customer a proper credit. A credit to a customer for a return should be supported by a standard credit memorandum approved and signed by the Post Exchange officer. Each such transaction results in a credit against the "accounts receivable"

and a charge or debit against the particular department involved.

Receipts

Under Receipts a strict separation of cash received from sales and other cash received (charge accounts) must be observed.

Cash peculations of accounts can occur if the Post Exchange officer does not keep a control account of "accounts or bills receivable," and if he does not verify all credit memoranda. A control account of "accounts receivable" is a safeguard. If total credit sales and total payments are posted to a control account, the difference should be the amount unpaid, which equals the total of individual accounts unpaid, less the credits for goods returned, overcharges, etc. (all of which have been approved by the Post Exchange officer). In addition to being a safeguard, this control account saves the Post Exchange officer from the otherwise necessary labor of verifying each individual charge account.

Transfers

Transfers between departments is the fifth of the divisions of our Post Exchange operation. For example, a transfer of supplies from store to grocery or vice versa must be properly debited and credited to the departments concerned. Under department transfers belong wastage, breakage, etc. Each department is credited with any which may occur, but none should be excessive and all should be recorded by periods of time so that each department's record can be compared.

This completes the remarks on the five operating divisions of Post Exchanges. Before making more specific suggestions relating to Post Exchange operations, the subjects of depreciation and concessions will be briefly discussed.

First, the matter of depreciation; the Exchange pays no income taxes; therefore, it is not necessary to have a sinking fund for depreciation. It is believed that depreciation on fixtures, automobiles, etc., should be charged to "profit and loss," preferably each month, so that profits will be reduced; then, these items should be carried at the depreciated value.

As to the grocery concessions, now that a Post which has a military population of more than a battalion may not properly employ enlisted men, it would seem desirable, in some cases, to give out the grocery concession. The success of a concession depends so much upon the concessionaire that great care is required in order to secure one with managerial ability and acknowledge. It should be understood that a Post Exchange grocery cannot compete with "cash and carry" chain stores. Nevertheless, such a concession is an asset to a Post if the concessionaire is a good meat cutter, handles good brands of groceries, and gives good service with a smile—all at favorable prices when compared with outside firms which deliver.

Care should be taken that the Exchange will not be involved in the business relationships between the concessionaire and the mercantile firms which supply the concession. A concessionaire should do business in his own name, and all the firms interested should have legal knowledge (information in writing) that a Post

Exchange cannot be held for such firms' sales to the concessionaire.

* * *

To assure the successful operation of a Post Exchange the following specific suggestions are offered.

Work quickly to secure a thorough knowledge of the divisions of operation of your exchange and a complete understanding of A. R. 210-65, W. D., 1929 and changes.

After taking over an Exchange, go over its accounts and learn why the Exchange is dealing with particular firms to the exclusion of others. Satisfy yourself that all merchandise is being purchased at the best prices. Regard with suspicion the salesman who is always anxious to present too generous samples.

Require all vendors to submit detailed monthly statements.

Watch your bills carefully and take advantage of all discounts. At the same time, be on the alert for the concern which gives a discount but charges more than its competitors.

Open all mail intended for the Exchange; know and understand the contents of each letter or document.

Read your cash register every evening after closing; check them against the cash and the coupons turned in. Keep the turnback keys of the registers in your personal possession. Personally lock all cash and checks in your safe, overnight.

A Post Exchange officer must rely on his steward. At the same time, keep a careful watch and check of the steward's work, so as to know at all times, what is going on. The tendency of most officers is to place too much reliance upon the steward, because of the belief that "he is absolutely trustworthy."

Check the steward's Daily Report of Sales against the cash and coupons, charge slips, and receipts from "accounts receivable."

Verify and destroy daily, all used coupons.

Keep a control book in your personal possession which will show the total daily receipts and disbursements. The steward's Daily Report can be altered if the steward is dishonest.

Do not permit the steward to make purchases or to contract indebtedness against the Exchange.

Keep all unsigned coupon books in your possession (that is in your safe). After you sign coupon books

give them to the steward. At the end of the period for issuing books, have the steward return all the signed coupon books, less the notes sent to organizations for collection.

The practice of depositing the *exact* amount of cash receipts is strongly recommended. This may be done daily or as often as it is possible to get to the bank. Even if several days' receipts are deposited at one time, a daily deposit slip can be made out and each shown separately on the bank statement. If, in addition, all disbursements are made by check, the monthly reconciliation of cash book, bank statement and check book is a comparatively easy task.

No employee of the Post Exchange should be allowed to have free cigarettes, cigars, ice cream, etc. They are being paid for their work and they should pay for such articles at the regular prices.

Attention is particularly invited to the first part of Par. 25 A. R. 210-65, Change #1, dated August 25, 1930, which reads, "Successful management, and a safeguarding of the responsibility of the Exchange Officer for the property under his control, require the adoption in each Exchange of a system of checks and controls over the stock both in storerooms and in salesrooms, designed to prevent stock losses and to render practicable the fixing of personal responsibility where such losses occur; such a system will be adopted in each "Exchange."

Every commanding officer, under whom a Post Exchange is operated, should realize the importance of the monthly audit as prescribed by Section VIII, A. R. 210-65. If the commanding officers had required auditors to carry out their duties in exact conformance with this section many Post Exchange entanglements would have been prevented. (Of course an auditor must be excused from all duties while he is making the audit.)

In the foregoing pages, the writer has attempted to give a general idea of the main operating divisions of a Post Exchange and to make some suggestions which, if carried out, will prevent many of the entanglements that have continuously occurred in the past. It is hoped that they will at least prove worthy of being taken under advisement, where applicable, and thereby possibly save some from the clutches of Old Man Trouble.



I HAVE NO SYMPATHY FOR WEAKNESS or lax discipline. Weakness in a military commander is ruinous to efficiency. But human sympathy is not incompatible with firmness and good discipline.—MAJOR GENERAL E. A. HELMICK.

Who Killed the Crabs?

Editor's Note: In these days when officers are working under high pressure, and the remarks entered in efficiency reports are given great weight, we are likely to forget that there is such a thing left in the world as a sense of humor. We hope that our readers will derive some pleasure from a report of an argument between two staff officers in the Panama Canal Department as to which one should furnish matériel for reducing the innumerable crabs which infest those beautiful shores. In order to make the picture complete we will print the correspondence in full, except for unimportant data pertaining to office records.

REQUISITION

To: QUARTERMASTER, PCD, Quarry Heights, CZ.

SHIP TO: QUARTERMASTER, Fort Randolph, Canal Zone.

Oil, crude, grade C	Gal.	250
Lime, Carbide residue	Pd.	1000
Oil required in connection with Anti-mosquito work.		

1st Ind.

August 7, 1933—To Quartermaster, Fort Randolph, C. Z.

1. Authority is granted for local purchase of the last item appearing on basic requisition.
2. More definite information should be furnished in connection with the requirements of oil for anti-mosquito work.

John P. Hasson,
Colonel, Q. M. Corps,
Department Quartermaster.

2nd. Ind.

OFFICE OF THE QUARTERMASTER; Fort Randolph, C. Z., August 9, 1933.

TO: Department Quartermaster, Quarry Heights, C. Z.

1. In an effort to control the breeding of malarial mosquitos at this post following the development of a number of cases of malaria, the post commander has directed that a detail working under the supervision of the Police Officer maintain a film of crude oil on all pools of water and in the crab holes where the water is high. This office has been required to supply the crude oil for this purpose. Is this a proper charge against B. & Q. funds, and if not, how may oil for the purpose be obtained?

2. Lime is being purchased locally.

J. N. Douglas,
Major, QMC.
Quartermaster.

3rd. Ind.

HQ. P. C. DEPT., Office of the Department Quartermaster, Quarry Heights, C. Z., August 15, 1933.

TO: Department Surgeon, Quarry Heights, C. Z.

Do you not have funds or the oil to supply for the extermination of mosquitos? I have never issued funds for anti-mosquito work as this matter has been considered as a Medical Department responsibility in the Panama Canal Department.

John P. Hasson,
Colonel, Q. M. Corps,
Department Quartermaster.

4th. Ind.

Hq. P. C. DEPARTMENT, Office of the Surgeon, Quarry Heights, C. Z., August 15, 1933.

To: Department Quartermaster, Quarry Heights, C. Z.

1. Anti-mosquito work pertains to the Medical Department, as a specific disease is directly involved. Fighting crabs, sandflies, and other similar animal life pertains to the Q. M. Department. The Medical Department does not propose to make an oil-bearing stratum out of the Fort Randolph Area by filling all the crab holes now present, and all the other new ones that will be formed immediately thereafter.

H. S. Hansell,
Colonel, Medical Corps,
Department Surgeon.

5th. Ind.

Hq. P. C. Department, Office of the Department Quartermaster, Quarry Heights, C. Z., August 22, 1933.—Thru Department Surgeon, Quarry Heights, C. Z., To Quartermaster, Fort Randolph, C. Z.

The situation's rather tense, in this damp and rainy weather,
 And so regardless of expense, we all must fight together.
 Mosquitos, Sandflies, Flies and Crabs are formidable foemen;
 Each one just bites and stings and stabs, like well training lusty yeomen.
 The Army needs its best morale, to meet the present crisis,
 The ammunition must not fail, regardless of the prices.
 The Q. M. Corps is always fair, or that's our main ambition;
 We'll share expenses on the square, and here's our proposition:
 The Medicos should first attack, with high power prophylactics;
 They never yet were known to lack in scientific tactics.
 The Q. M. Corps swings round their flanks, bold venturesome and breezy;
 With oil in fifty gallon tanks, that's thick and black and greasy.
 Mosquitos are the special prey of the Medical Department.
 It's up to them to kill and slay a large complete assortment.
 The Q. M. Corps will skirmish round for crabs on land and water;
 We'll each take credit, pound for pound, for enemies we slaughter.
 We'll bring our catches into camp and properly display them;
 Each one to bear a dating stamp, and accurately we'll weigh them.
 But in these actions round the beach, 'gainst foes that we're surmounting,
 The units will be "pounds" not "each," to expedite accounting.
 Efficiency will be displayed to expert Finance scholars,
 By net results in every raid, and the cost in cents and dollars.
 The Air Corps also might take part, and show what aviation
 Can do with insects keen and smart, and the wily shrewd crustacean.
 The Coast Artillery, I fear, would waste their ammunition,
 On enemies that sail so near, so changeful of position.
 The tried and true "C. W. S." can join this combat gory,
 And in our period of stress achieve immortal glory.
 They'll fight these most unwelcome guests with poison scientific,
 And if they cannot kill the pests they'll make them less prolific.
 But if the worst should come to worst, and our oil is all exhausted,
 And the army funds have been disbursed, and the treasury is busted,
 Fort Randolph then will drip with oil, from the flagpole to the cellar,
 And we'll sell its rich and fertile soil to John D. Rockefeller.
 But getting to essential points, we'll rise to the occasion,
 And we'll soak with oil these breeding joints to stop this rude invasion.
 This creeping, crawling, flying "Zoo" must be exterminated;
 So charge the oil to "B & Q" and get them decimated.

John P. Hasson,
 Colonel, Q. M. Corps,
 Department Quartermaster.

6th Ind.

Hq. P. C. Dept., Office of the Surgeon, Quarry Heights, C. Z., August 26, 1933.
 To: The Quartermaster, Fort Randolph, C. Z.

H. S. H.

7th. Ind.

QM. Ft. Randolph, C. Z., August 29, 1933—To Commanding Officer, Fort Randolph, C. Z.

The medicos still bleed and bleed—and still we're not defeated,
 But what, oh what, are we to do, when B & Q's depleted?

Clarence Renshaw,
 2nd. Lt., Q. M. Corps,
 Quartermaster.

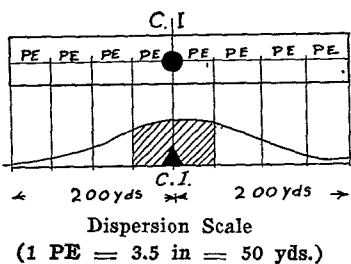
A Field Spotting Range

By Major Meade Wildrick, C.A.C.

THE field spotting range described here will provide officers responsible for conducting artillery instruction with a simple and ready means of giving this type of training. This method of instruction was used during the past summer at the Coast Artillery R. O. T. C. Camp at Pine Plains, N. Y., and at Fort Totten, N. Y., with satisfactory results. It lends itself to training Reserve, National Guard and R. O. T. C. students, and it is hoped it may prove of assistance to instructors detailed on this duty.

Description

First lay off on the parade ground or on the armory floor four stations, as shown in the Diagram of Position, consisting of two observation posts, the target, and position of the directing gun. For purpose of simplicity the set is made in the form of an equilateral triangle, the stations being 29 feet apart as indicated. This represents, on the ground, a similar position 5,000 yards on a side. Next, take a piece of mosquito netting, 28 feet long and about three feet wide, on which is painted a ladder of dispersion as indicated on the Dispersion Scale.



P. E.	No. Shots
0 (Hit)	6
+ .2 }	{ 6
- .2 }	{ 6
+ .4 }	{ 5
- .4 }	{ 5
+ .6 }	{ 5
- .6 }	{ 5
+ .8 }	{ 4
- .8 }	{ 4
+ 1.0 }	{ 4
- 1.0 }	{ 4
+ 1.2 }	{ 4
- 1.2 }	{ 4
+ 1.4 }	{ 3
- 1.4 }	{ 3
+ 1.6 }	{ 3
- 1.6 }	{ 3
+ 1.8 }	{ 3
- 1.8 }	{ 3
+ 2.0 }	{ 2
- 2.0 }	{ 2
+ 2.2 }	{ 2
- 2.2 }	{ 2
+ 2.4 }	{ 2
- 2.4 }	{ 2
+ 2.6 }	{ 1
- 2.6 }	{ 1
+ 3.0 }	{ 1
- 3.0 }	{ 1
+ 3.5 }	{ 1
- 3.5 }	{ 1
+ 4 }	{ 1
- 4 }	{ 1

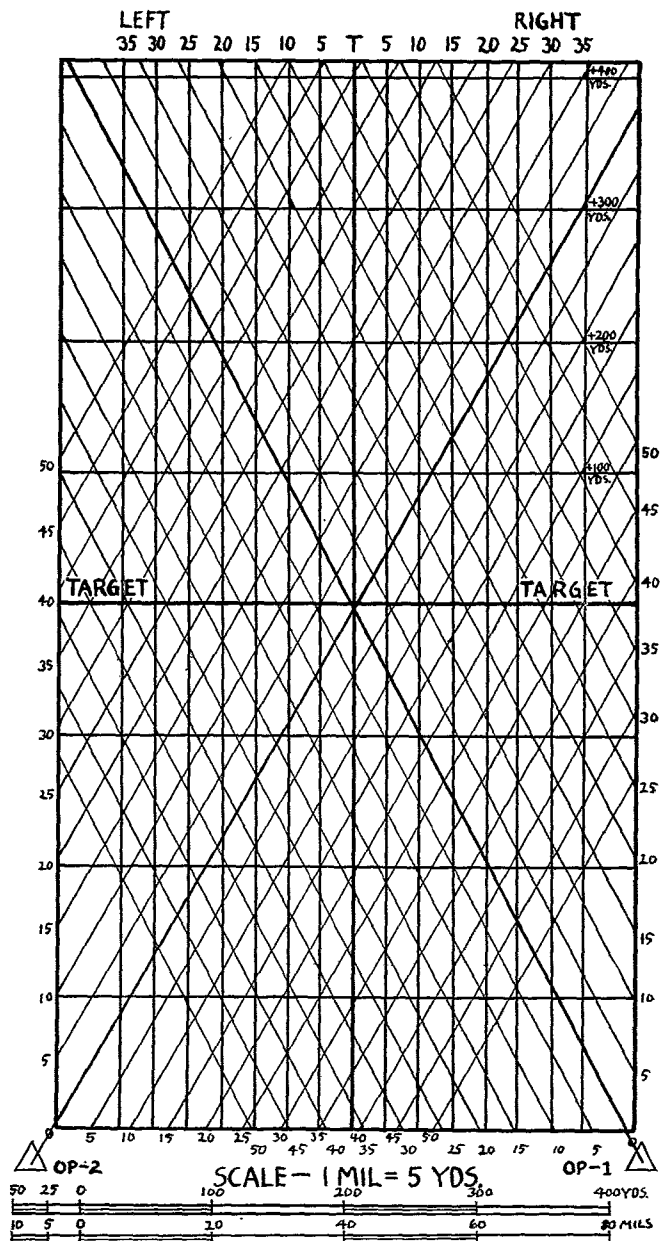
Then a hit bag, graduated in probable errors, is constructed. An impact chart, similar to the one shown in the accompanying diagram, is then drawn.

Operation

The class is divided so as to have at least one observer at each O. P. He should be equipped with a pair of field glasses having a mil scale, a B. C. telescope, or an azimuth instrument. There should be at least two students at the battery position, one to act as battery commander and order corrections based on the observation of fire,

while the other plots the fall of the shots on the impact chart and gives the results to the battery commander.

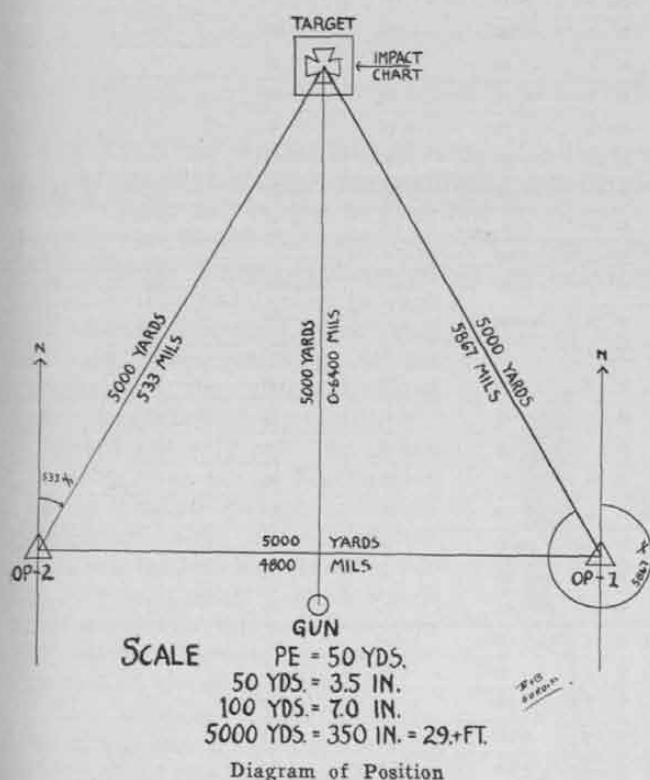
In addition there should be at least two operators at the target position, one to draw the fall of the shot from the hit bag and place the bursts at the proper position on the dispersion net by means of a piece of cotton, and the other to move the dispersion net with respect to the target upon orders received from the



Impact Chart

battery commander, based on the latter's corrections during the adjustment of fire.

By this method actual field conditions can be reproduced involving all methods of fire adjustment and employing either bilateral or unilateral observations. Corrections can be easily and quickly made and the student can be given a clear-cut picture of what takes



place under service conditions without the necessity of actual firing.

The same principle can be used in designing a spotting range in three dimensions for use with anti-aircraft or field artillery fire. In this case the target would have to be mounted on a stand with the trajectories represented by wires; one of which could be moved with relation to the other and would permit the burst to be moved along it.

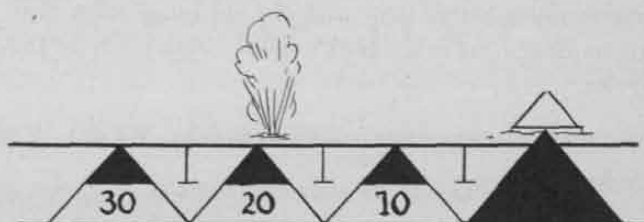
A Modified Range Rake

By 1st Lieutenant Ralph W. Cooper, Jr.,
 265th C. A., Fla. N. G.

THE range rake described here has been designed to spot on a towed target, giving apparent range deviations in yards.

The rake consists of two main parts: A main arm graduated in yards to correspond to the length of tow line, and a cross arm which acts as a scale for reading range deviations in yards (graduated one foot equals 100 yards). The zero end is fitted with an eye piece.

The cross arm is made of wood, tapered toward the ends for lightness. This arm is designed to slide on the main arm and a clamp secures it at the desired setting on the "length of tow line" scale. Pointers con-



Drawn Scale Suggested in Place of Nails

sisting of nails, the heads of which have been removed, are inserted into drilled holes in the cross arm, and are spaced 0.05 feet apart, a $\frac{3}{4}$ D copper nail at each 0.1 foot representing ten yards and a $\frac{1}{2}$ D steel nail in between representing five yards. A scale on the near side of the arm, graduated in units of ten yards, facilitates the reading.

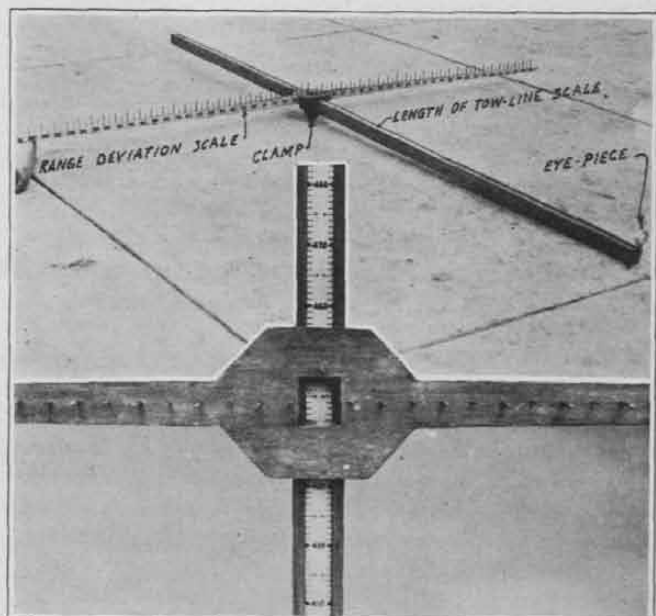
To operate, the cross arm is set to the reading on the main arm, corresponding to the length of the tow line and clamped. The target is observed by using the center pointer as a sight, keeping the eye close to the eye-piece for greater accuracy. When the splash occurs the position is spotted on the nails, the deviation being read in yards on the scale beneath.

The tow line should be marked before leaving the wharf. A correction may be made for error due to shrinkage of the tow line but this will prove negligible.

The wood used in the construction of the rake is maple. The scales were drawn on heavy paper; cemented to the wood and coated with clear shellac.

Nails in the top of a range rake are more or less of a nuisance. They are dangerous and easily bent. They can be eliminated by using a scale similar to the one shown in the accompanying drawing.

This rake, designed by the author, with the assistance of Staff Sergeant Charles Bosenberg, was tested at Key West during this summer's training period. The results obtained as shown in the following table



Above: The modified range rake. Below: A closeup of the cross arm, showing the window through which the tow line scale may be read.

were so much better than with the old range rake, that this improvement is believed worthy of adoption by the service.

HDQ. BATTERY, 265th COAST ARTILLERY, F.N.G.
AUGUST 17, 1933

TABULATION OF SPOTTING RESULTS

Btry. Shot No.	Camera Record	Modified Range Rake	Old Type Range Rake	Spotting Board	Air Spot
BATTERY "A"					
T 1		-150		-179	
T 2	-44	-40		-72	
T 3	-78	-80		-75	
T 4	-37	-40		Hit	
R 5	-130	-130		-140	
R 6	-226	-230		-221	
R 7	+16	+15		Hit	
R 8	-74	-80		-104	
R 9	-75	-70		-58	
R 10	-95	-95		-115	
R 11	-282	-270		-287	
R 12	+45	+45		+46	
BATTERY "B"					
T 1					
T 2	+259	+265		+475	
T 3	+78	+85		+138	
T 4	+372			+455	
R 5	+5	+4			
R 6	+158	+155			
R 7	-232	-230	-249	-242	
R 8				-520	-500
R 9	+227	+220	+140	+264	+500
R 10	+85	+95	+90	+88	+100
R 11	+43	+45	+60	+25	+50
R 12	+44	+55	+70	+25	

Editor's Note:—

This device introduces no new principles. It is designed to read the range deviations in yards without the necessity of converting from the mil scale. In doing this no account is taken of shrinkage and sag in the tow line. The accompanying table of comparative results indicates that the device may have some merit for quick determination of range deviations.

Btry. Shot No.	Camera Record	Modified Range Rake	Old Type Range Rake	Spotting Board	Air Spot
BATTERY "C"					
T 1					
T 2			-347		
T 3			-347		
T 4					
R 5	-143	-140	-140		
R 6	+220	+225	+247		
R 7	+49	+45	+49		
R 8	+89	+90	+90		
R 9	+28	+25	+40		
R 10	+109	+105	+124		
R 11	+248	+245	+272		
R 12	+73	+75	+84		
BATTERY "D"					
T 1	-441				-500
T 2	-236	-245	-192	-168	-200
T 3	-236		-182		-200
T 4	-92	-95	-76	-115	-80
R 5	-56	-55	-46	-58	-50
R 6	-63	-75	-61	-65	-50
R 7	Hit	Hit	Hit	Hit	
R 8	-31	-30	-30	-33	-20
R 9	+25	+25	+20	+26	+20
R 10	+81	+85	+101		+30
R 11	+20	+25	+15	+40	+20
R 12	-21	-25	-20	-13	-20
BATTERY "E"					
T 1	+137	+150			
T 2	-47	-45	-51		
T 3	-160	-165	-192		
T 4	-112	-105	-111		
R 5	+168	+170	+114		+200
R 6	-99	-105	-101	-100	-100
R 7					over 900
R 8	+66	+65			
R 9					
R 10	+144	+155	+167	+158	+100
R 11					
R 12					

NOTE: Range deviation is in yds.



WHEN THE COMPOSITION of his army was distinctly inferior to that of the troops formerly commanded by him, Napoleon deliberately made greater use of masses, instead of the light, speedy, open-order lines of earlier days. It is interesting to note that as the quality of the troops went down, the proportion of artillery to infantry went up.—MITCHELL.

The Grand Strategy of the World War

From the Point of View of an "Easterner"

By Captain Gordon Gordon-Smith

PART II

WITH the over-running of Serbia and the establishment of direct communication between Germany and Turkey, as described in the previous article, the World War entered upon a new phase. The Central Powers had ceased to be a besieged fortress, they had broken through the forces encircling them and, through their possession of the Dardanelles, they still maintained their strangle-hold on Russia.

There was only one "fly in the ointment," as far as the position of the Central Powers and their Bulgarian ally was concerned. This was the Salonica front, which, as long as it existed, was a standing menace to the modified form of "Mittel Europa" which Germany had at last achieved.

The creation of the Salonica front was not a voluntary act on the part of the Entente Powers. It had been imposed upon them by the enemy. In the first eighteen months of the war all initiative had been in the hands of the Central Powers. This was inevitable, owing to the fashion in which the Entente Powers had organized the conduct of the war. They possessed no central authority, no common council empowered to carry on the war as a whole.

Each time some German success placed them face to face with a *fait accompli* they began hastily to take council. Paris consulted London, London got in touch with Petrograd and Petrograd sought the views of Rome. But while the Allies were thus, to use a vulgar but expressive phrase, "chewing the rag," events were moving swiftly. The contrast in the enemy camp was complete. There the will of the Kaiser was supreme. When he "pressed the button" Vienna, Sofia and Constantinople moved like one man. Napoleon once said "*l'Autriche est toujours en arrière, d'une idée, d'une année, d'un corps d'armée.*" This ironical phrase of the great captain completely described the situation and policy of the Entente Powers.

As stated in my first article, when the Austro-German break-through took place on the Danube front,

the Allies began hastily landing troops at Salonica in a vain effort to come to the assistance of the Serbs. They considered they had a perfect right to make use of that Aegean port since Greece and Serbia were allies, in virtue of the treaty signed in 1913, after the

Turco-Balkan war. By this treaty Greece and Serbia agreed to act together in case of an attack by Bulgaria. The Belgrade Government, in such a contingency, undertook to place 150,000 men on the Serbo-Bulgarian frontier. In view, however, of the Austro-German attack on the Danube front, Serbia was unable to spare such a force. This being so, M. Venizelos, the Greek Premier, suggested that the Entente Powers should furnish them. This they consented to do and in October 1915 began disembarking troops at Salonica. Simultaneously M. Venizelos ordered the mobilization of the Greek army. But at this point the first complications arose. Though Bulgaria had mobilized her army she had not yet attacked Serbia, so that the *casus foederis* provided for in the treaty did not actually exist and Greece was still nominally neutral. M. Venizelos was, therefore, forced, as a matter of form, to issue a protest against



King Constantine of Greece

the landing of the Franco-British troops. But at the same time he issued orders to the Greek officer commanding at Salonica, General Moskhopoulos, to make no opposition to the landing of the Allied troops but on the contrary to show the French and British commanders every courtesy.

But both the Allies and M. Venizelos reckoned without Greece's pro-German King. A week later he dismissed M. Venizelos from office and replaced him by M. Zaimis, who was pledged to a repudiation of the Graeco-Serbian treaty and the continuation of so-called neutrality on the part of Greece. This secession of Greece radically changed the military situation of the Allies. Instead of being flanked and aided by 300,000 Greek allied troops, the handful of men landed (about 20,000) constituted the entire force that was

to save Serbia. These were shortly afterwards reinforced by the 10th Irish Division, 13,000 men, from Gallipoli, while France sent additional troops, so that at the opening of the campaign this force, later to be known as the Army of the Orient, numbered nearly 40,000 men.

This army was placed under the command of General Sarrail, a soldier of eminence, who had played an active and brilliant part on the Western front in France. He had the reputation of being an energetic and resourceful leader. During the retreat to the Marne he commanded the Third French Army, which held the sector around Verdun. He was chiefly responsible for the field entrenchments around that city (he belonged to the engineer arm of the French army) which afterwards enabled the French successfully to resist the attack of the German Crown Prince's army.

He had, however, the reputation of taking a more active part in French party politics than was advisable in a soldier. By many his rapid advance in rank and the confidence he enjoyed were ascribed to the support he received from the Radical Socialist party. This made him many enemies among military men and caused much division of opinion as to his real merits as a soldier. When he first arrived in Salonica he organized a Political Bureau, as part of the General Headquarters Staff, composed of militarized deputies from the French Chamber. This was later dissolved, by orders from Paris, and the soldier-deputies recalled. Many people believed further that he occupied himself too much with political moves in Athens and in Greek Macedonia, to the detriment of his military effort.

At the same time, from the very start, his task was no easy one. Though General Sarrail was nominally in supreme command, the commander of the British contingent, General Sir Bryan Mahon, was subordinated to General C. C. Monro, the Commander-in-Chief of the British Mediterranean Expeditionary Force, with headquarters at Malta. Each time the British commander at Salonica received an order from General Sarrail he submitted it by cable to General Monro for his approval before carrying it out. It would be difficult to find a better example of how *not* to run a campaign than the situation thus created.

In October 1915, when the Salonica force first began active operations, it soon became clear that all hope of joining forces with the Serbian army and undertaking a successful offensive against the Austro-Germano-Bulgarian invasion was out of the question. The most that the army under General Sarrail could hope

to do was to push forward and capture Uskub (Skoplie), the point where the Salonica-Nish railway has its junction with the branch line to Mitrovitz, in the Sandjak of Novi-Bazaar, the line along which the Serbian armies were retreating. If the Franco-British force could have captured and held Uskub, a safe line of retreat would have been secured for the Serbs.

But it was not to be; events were moving too fast. On October 20th the Bulgarian army under General Todoroff captured Veles (Kuprulu) and two days later made its triumphant entry into Uskub. A last effort was then made to effect a junction at Veles with the Serbs who were operating down the Babuna Pass. The difficulties, however, proved insurmountable and with the failure of this effort the last chance of establishing contact with the Serbian army was at an end and King Peter's armies were forced to resume their retreat and take refuge in Albania.

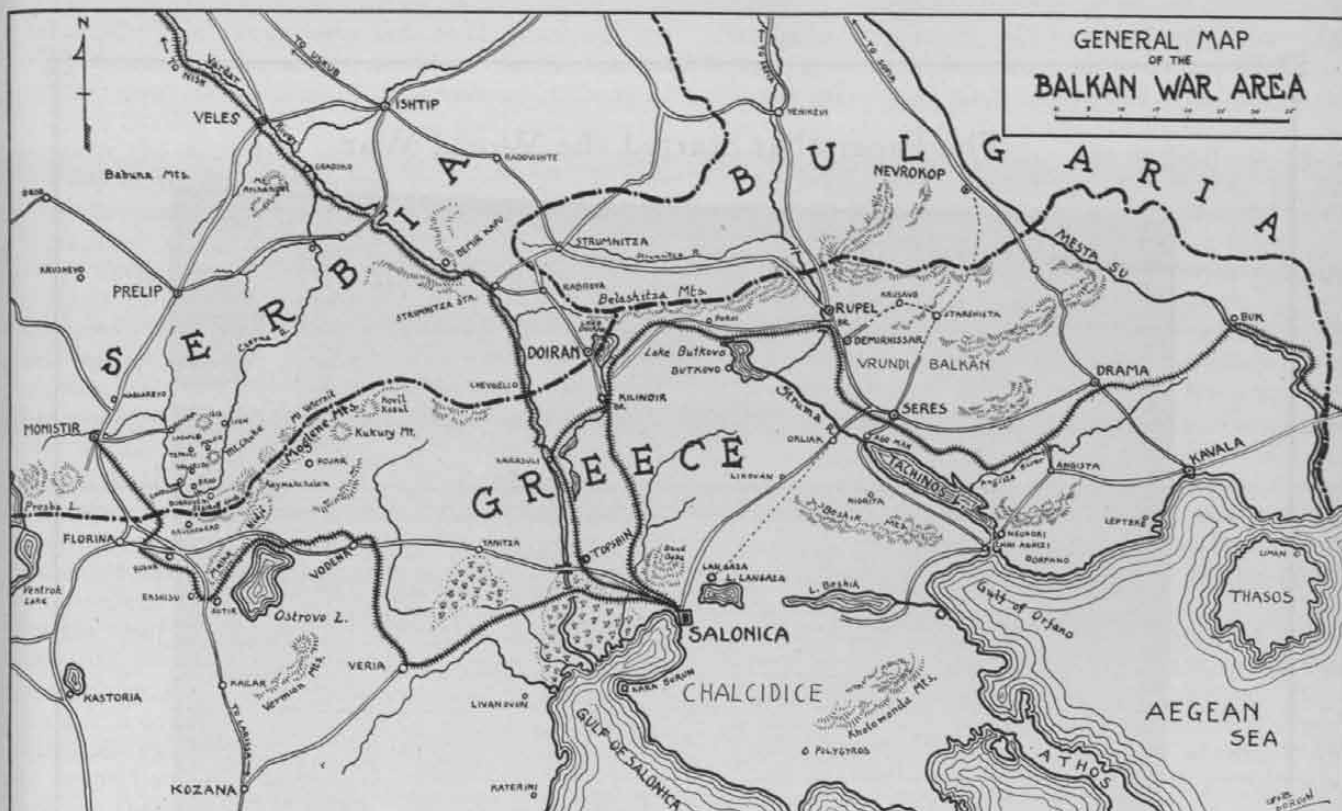
The Allied forces were, therefore, forced to abandon all efforts to aid the Serbs and had to fall back on the Salonica base. The attack of the Bulgarians was so violent that the retreat became a difficult and delicate operation, as they had to fall back through the pass known as the Demir Kapu. Though this defile is fairly broad at its entrance, its exit, twelve miles distant, is a narrow, rocky gorge, 500 yards long, from which the pass takes its name, Demir Kapu being Turkish for Iron Gate.

But the army could not remain on Serbian soil. It was too much *en l'air*, too far removed from its base at Salonica. It, therefore, became necessary to return to Greek territory. This at once raised political difficulties. The Greeks pretended to be afraid that the Germano-Bulgarian armies might invade Greece in pursuit of the Franco-British force. A large number of Greek troops were concentrated around Salonica and it became known that in certain circles in Athens the idea of disarming and interning the retreating Franco-British army was gaining ground.

This caused the Allies to take drastic measures, and on November 23, 1915, they presented the Skouloudis Government (which on November 7 had replaced the Zaimis Cabinet) with a note stating that "in view of the attitude adopted by the Hellenic Government toward certain questions affecting the security of the Allied troops and their freedom of action (two privileges to which they are entitled in the circumstances in which they landed on Greek territory) the Allied Powers have deemed it necessary to take certain measures, the effect of which is to suspend the economic and commercial facilities which Greece has hitherto enjoyed at their hands."



Von Mackensen



King Constantine and his Government disavowed any intention of attacking or interning the Franco-British troops. They were, however, much opposed to withdrawing the Greek troops from the zone of the Allied army or conceding to the latter the full use of the railways and harbor.

The Greek Government offered to establish a "corridor" by which the Allied troops could retire on Salonica and embark there. Missions from France and England, headed by M. Denys Cochin and Lord Kitchener, failed to get anything but vague assurances from King Constantine. The blockade was accordingly maintained until December 12 when the Athens Government gave way and consented to withdraw all the Greek troops, except one division, from Salonica.

On that date all the Franco-British forces were on Greek territory, holding a front running from Karasuli, on the Vardar railway, to Kilindir, on the Salonica-Dedeagatch railway. These two points were connected by a branch line of railway. It was on this line that the Allies prepared for the supreme attack by the enemy. But this never came. Why the Central Powers failed to take advantage of their opportunity finally to crush the Allied resistance and capture Salonica has never been explained. It was one of the major errors of German strategy and contributed not a little to their losing the war.

The Athens Government pretended that it deserved credit for this, alleging that the Bulgarians feared the intervention of Greece if they invaded Greek territory, but in view of the subsequent treason of the Greek King and Government in surrendering Fort Rupel to the Bulgarians without firing a shot, this seems hardly

probable. It is more probable that the Kaiser counted on the "neutrality" of his royal brother-in-law to render the position of the Allies untenable and lead them to abandon the whole Salonica front, the more so as the Germans were openly boasting of the coming invasion of Egypt by their Turkish allies, now completely re-provisioned and re-munitioned, as the result of the crushing of Serbia. In addition there was wrangling between Berlin and Sofia as to whether the forces in the Balkans should be under the supreme command of a Bulgarian or a German general. Vienna and Sofia were further in hot dispute as to the ultimate fate of Salonica, both Austria and Bulgaria claiming the right to annex it when captured. Whatever may have been the reason for the hesitation of the Central Powers, the fact remains that the Franco-British army was able, unmolested, to take over its new positions on Greek territory.

When this was accomplished the whole mission and scope of the Army of the Orient had changed. Its original objective had been an energetic offensive to save the Serbian army and prevent the Austro-German forces under General von Mackensen from joining hands with the Bulgarians. In this it had failed. The Serbian army had been forced to quit Serbian territory and retreat into Albania. Salonica, from being a mere port of disembarkation, had now changed to the base of a new defensive front. The task of General Sarrail's army was no longer that of driving out the Germano-Bulgarian army but was to prevent the port of Salonica falling into the hands of the enemy.

The first care of the Allied Commander-in-Chief was to prepare the defence of the entrenched camp of

Salonica. This was no easy task as the total number of troops at his disposal at this date did not exceed 200,000 men. On account of the smallness of his army General Sarraill could not dream of holding either the outer or the inner ring of mountains which surround the city and plain of Salonica.

As a consequence the western line of defense was established on the Vardar. Toward its mouth that river forms a marshy delta, providing a natural obstacle to enemy attack. This made it possible for the line to be held by a minimum number of men. But this sector had one serious drawback, namely, that malaria of the most virulent kind raged there six months of the year. From the village of Topshin, on the Vardar, the line ran east to the Langhaza and Beshik Lakes, reaching the Gulf of Orfano at Stavros. The total length of the line was fifty miles.

Behind this line lay the Chalcidice Peninsula, into which, if hard pressed, the Army of the Orient could have retired. As this is bounded on the western side by the Gulf of Salonica and on the eastern side by the Gulf of Orfano, the guns of the fleets could have powerfully aided the land forces and rendered the peninsula practically impregnable. General Castelnau, Field Marshal Joffre's Chief of Staff, who made a tour of inspection on December 20, 1915, gave it as his opinion that the entrenched camp of Salonica was safe from capture.

Nothing was neglected to still further strengthen the natural advantages of the position. A deep and elaborate system of trenches, with formidable barbed wire entanglements, was constructed, from which numerous machine gun batteries commanded all the points from which the enemy could attack.

But if the military situation was fairly satisfactory it was more than could be said of the political one. As the Army of the Orient was on what was technically neutral territory, the French and British politically enjoyed no more rights than the enemy. The presence in Salonica of Austrian, German, Bulgarian and Turkish consulates, together with hundreds of German and Austrian civilians and thousands of Turks and Bulgarians, was a constant menace, against which a large force of military police had to be employed.

This soon found evidence that the various consulates, as was to be expected, were centers of enemy espionage. Their activities were undoubtedly at the bottom of the enemy air raids and after one of these General Sarraill ordered the consuls to be arrested. This action on the part of the French Commander-in-Chief caused loud protest from the Greek Government. This, however, died away when the French were able to bring proof that the consulates were not only the headquarters of enemy propaganda and espionage, but were actually used as storehouses for arms and munitions, with which it was evidently the intention of the enemy to arm the hostile section of the population in the event of a serious reverse to the Allies.

In spite of the loud assurances by the Greeks of their "benevolent" neutrality, the policy of the Athens Government was viewed with profound (and, as it

afterwards turned out, well merited) suspicion. The defence of Eastern Macedonia, of which the vital point was the great iron girder bridge of Demirhissar, on which the railway from Doiran to Seres crossed the Struma, was in Greek hands. The northern extremity of the bridge was guarded by Fort Rupel, the key position of the Struma entrance into Greece. Fort Rupel was the most powerful fortress on Greek soil. But as General Sarraill had no confidence that the Greek garrison would put up an energetic defense against the Bulgarians, he gave orders that the bridge at Demirhissar and a smaller one at Kilindir, near Doiran, should be blown up. This was done on January 12.

A week later General Sarraill was officially entrusted with the supreme command of the Army of the Orient. This automatically put an end to the extraordinary situation of the general commanding the British contingent being responsible to Malta for all his operations.

During the winter months operations were chiefly confined to skirmishes between the cavalry of both sides, occasionally reinforced by light artillery. Reinforcements, both British and French, meanwhile were arriving steadily, so that by the end of winter the Army of the Orient had increased to over 200,000 men.

Such was the position when, in the spring of 1916, the transportation of the Serbian army from the island of Corfu was begun. This force had, in the interval, been thoroughly re-equipped and re-organized. The new material had been assembled at Orange, Lunel and Montauban in the south of France. As the entire artillery, pontoon trains, field telegraphy, ambulance, transport, motors, horses and all the thousand and one things that make up the impedimenta of a modern army in the field had to be transported to Salonica, the task was a formidable one.

But if the military part of the transportation ran smoothly enough, it was more than could be said of the political side. The Entente Powers knew that the Mediterranean was swarming with enemy submarines. They, therefore, proposed that the transports, instead of making the long voyage around Cape Matapan, should proceed to Itea in the Gulf of Corinth and land the troops there to be sent on by the Larissa railway to Salonica.

To this the Skouloudis Government raised endless objections. It claimed that the passage of the army would disorganize the ordinary traffic and that the Serbs might bring infectious diseases into the country and, last but not least, the permission to cross Greek territory might be regarded as a breach of Greek neutrality, which might embroil Greece with the Central Powers. The real reason was, of course, that the pro-German Greek King desired to put every obstacle in the way of the Allies and, in the interest of his imperial brother-in-law, delay as long as possible the arrival of the Serbian reinforcements on the Macedonian front.

But while these long-drawn-out negotiations were going on at Athens, the Serbian Headquarters Staff

began the transport of the troops by sea, preferring to take the risk of submarine attack rather than lose any more time. For the transportation France provided 21 vessels, Italy 5 and Great Britain 3. The transportation, thanks to the tireless vigilance of the convoying fleets, was accomplished without the loss of a single man.

The first transport left Corfu on April 8 and by June 6 the entire Serbian army, re-clothed, re-shod and re-equipped, was on Macedonian soil, ready to take the field once more. Its strength was about 100,000 men.

It consisted of three armies and an independent cavalry division. The First Army, was under the command of Field Marshal Misitch. It consisted of the Vardar Division, under the command of Colonel Lutsakovitch and the Morava Division, under Colonel C. Milovanovitch.

The Second Army was under the command of Field Marshal Stepa Stepanovitch. It consisted of the Shumadia Division, under the command of Colonel Zivko Pavovitch (who, in the preceding campaign had been Assistant Chief of Staff) and the Timok Division, under the command of General Militch.

The Third Army was under the command of General Milosh Vasitch. It consisted of the Drina Division, under the command of Colonel Smilavitch and the Danube Division, under the command of Colonel Angelovitch.

The divisions of infantry consisted of four regiments, each of three battalions, the divisional cavalry, the divisional artillery (field, mountain and howitzer batteries) and the necessary sanitary and commissariat sections and the transport service.

The whole army was under the command of the Prince-Regent Alexander, with General Boyovitch as Chief of the Headquarters Staff.

On July 30th a division of Russian troops, under the command of General Leontieff arrived and was followed shortly afterwards by 30,000 Italians, under the command of General Alfonso Petitti de Roreto. With their arrival the Army of the Orient was now definitely constituted. It was, in many respects, the most remarkable force in military annals, consisting as it did of French, British, Serbian, Russian and Italian troops. Though this certainly made for picturesqueness it did not make it as efficient a fighting machine as it would have been if it had consisted of troops of a single nationality. Each army enjoyed military and administrative autonomy. Each had its own Commander-in-Chief and its own Headquarters Staff. The French contingent was under the command of General Cordonnier while General Sir Bryan Mahon had been succeeded in command of the British force by General G. F. Milne.

Up to the arrival of the final contingents of the Army of the Orient there had been more or less a lull in the operations on the Salonica front. But in the meantime events of great political importance had taken place. The complete abandonment of the offensive by the Allies and their retirement within the entrenched camp of Salonica had greatly encouraged the

enemy and had caused him to decide to attack. The weak point of the Allied line was the position to the east of the Struma. The right bank of that river and the Greek frontier were guarded by French troops but, except for the destruction of the Demirhissar bridge, nothing had been done to cover the eastern flank. It is true that this was occupied by Greek troops, but General Sarraill was filled with deep distrust of the soldiers of King Constantine. The positions they held should have guarded the Allies from attack through the Struma valley. The entrance to this was commanded by Fort Rupel, the most formidable fortress in Greece. This fortress was strongly garrisoned by Greek troops and behind it lay two Greek army corps, one having its headquarters at Seres and the other at Kavala.

A few days later General Sarraill's fears were justified. On May 26th the Bulgarian army suddenly advanced on Fort Rupel. The commandant of that fort, after the merest pretence at resistance, surrendered to the enemy. The key of the Struma valley was, therefore, now in the hands of the Bulgarians. It was subsequently discovered that this act of betrayal by the Greeks had been plotted months before. As far back as March, General Yanakitsas, the Greek Minister of War, had sent instructions to all the commandants of fortresses in Greece, ordering them not to offer any resistance to the Bulgarian or German armies.

Needless to say, this act of treachery led to an instant and irremediable breach between the Allies and the Skouloudis Government. A strict blockade of all Greek ports was at once established and this was followed by a peremptory demand for the immediate dismissal of M. Skouloudis and his Cabinet and its replacement by a *cabinet d'affaires*, which should be entirely without political color and which should guarantee the continuance of a "benevolent neutrality" *vis-a-vis* the Entente Powers. In addition, the latter demanded the complete demobilization of the Greek army, the dissolution of the Greek parliament and the dismissal of certain objectionable police officials. As a result of these measures M. Zaimis was recalled to the premiership.

The Greek opposition being, for the time being at least, "steam-rollered", General Sarraill started the organization of his front. To the British was entrusted the part to the east and northeast of Salonica, along the Struma from Lake Butkovo to the northern extremity of Lake Tachinos. The French held the centre of the front, the line running from Lake Doiran to a point west of the Vardar, where it joined the sector held by the Serbian army. The French sector was the shortest but strategically the most important of the three, as it extended along the valley of the Vardar, the direct line of route of an invading army marching on Salonica. It was opposed by a Germano-Bulgarian army under General von Winckler. The British and Serbian contingents were at first faced by purely Bulgarian armies under the command of General Lodoroff, but later the line facing the Serbs was reinforced by German troops.

General Sarraïl paid the Serbian army the high compliment of assigning to it, as its field of operations, the most formidable portion of the whole front, the towering Moglene mountain range, a natural fortress of almost impregnable strength. This mountain range is the natural barrier defending the plain of Monastir. The average height of the mountains is about 5000 feet, though at several points this is exceeded, the cloud-capped summit of the gigantic Kaymakchalan towering up over 8000 feet above the plain. These mountains are, for the most part, bare masses of granite, denuded of all vegetation and rising, step by step, by precipitous cliffs, up which the attacking force had to climb, often on hands and knees.

It was in this region that the Serbs began their attack on July 26. On that day the Shumadia Division drove the enemy from a number of positions, notably the villages of Pojar and Strujisino. On the following day the Bulgarians counter-attacked. The battle raged violently for 28 hours but in spite of all their efforts the Bulgarians were unable to regain the lost positions. The vigor and precision of the fire of the Serbian artillery proved too much for the enemy. But at the same time, the Serbian success was only partial, for though they had succeeded in gaining a footing on the rocky sides of the mountain range, the Bulgarians still held the summits. The operations in the last week of July were, therefore, chiefly of a preparatory character and paved the way for the second phase.

During the first half of August there was a lull in the fighting which the Bulgarians made use of to entrench themselves strongly and line their front with barbed wire entanglements. Hostilities were resumed on August 17 with a furious Bulgarian attack all along the front. This was developed in two directions, on the one hand they attacked the Serbian positions on the Moglene range, held by the Shumadia and Timok Divisions, trying to hurl them back on the plain, and on the other they attacked the troops of the First Army holding Florina, with the object of driving them to the other side of Lake Ostrovo. This offensive coincided with the entry of Roumania into the war, the object being to inflict a crushing defeat on the Serbs, so as to be able to send troops from the Macedonian front to reinforce the Bulgarian army facing the Roumanians on the Dobrudja front. The effort, however, proved disastrous for them. Not only did their attack on the Katunatz and the Pojar, held by the Second Army, though executed by 7000 men, fail completely, but the Bulgarians were driven from a number of their positions by the furious counter-attack of the Serbs. By August 21st they were driven almost completely from Mount Veternik and Mount Kukurus.

The Bulgarian losses were very great. The first day they had 400 killed and 600 wounded. The following day whole regiments were decimated. The Bulgarian dead were piled up by hundreds and the army was greatly discouraged. They had more success, however, in the direction of Florina. They were able to seize that town as well as the important position of Malka-Nidje. Florina was only held by a weak advance



Field Marshal Putnik, Chief of Staff of the Serbian Army
During the Campaigns of 1914-15.

guard of the Serbian First Army, which was unable to resist the onslaught of the Bulgarian main body. A Serbian division sent to the assistance of the troops holding Florina, resisted for several days the attacks of two and a half Bulgarian divisions. The Bulgarian success at Florina was dearly bought as they lost 10,000 to 12,000 men in the operations. The Serbs, however, also lost heavily, having about 5000 men *hors de combat*. But the partial success at Florina did not justify the Bulgarians withdrawing a single battalion from the Macedonian front to reinforce their troops facing the Roumanians. This marked the end of the second phase of the operations.

The third phase began on September 12th. On that date the Serbian First Army, reinforced by French and Russian troops, undertook a strong offensive toward Florina. At the same time the Second Army began an attack on the Moglene front, but this was merely a demonstration, the real attack being on Florina. After two days' artillery preparation, the Serbs, by a vigorous attack, carried the Bulgarian positions. In this attack they captured 40 guns and a large quantity of material of all kinds. The Bulgarians retired on the line Krushograd-Soviet Starkoff Grob-Kaymakchalan.

But the Serbs did not give them any rest even on this new line. On September 17th, they gained a footing on the lower slopes of the Kaymakchalan. The Bulgarians had always attached great importance to this position. During the whole summer they had worked on its fortification, till it bristled, from base to summit, with lines of trenches and barbed wire entanglements so that the position, naturally extremely strong (at the highest point it reached over 8000 feet and on the eastern slope it was almost precipitous) was made seemingly impregnable. The Bulgarians knew that as long as they held the Kaymakchalan they could prevent the Serbs debouching on the Czerna Reka (Black River) and the plain of Monastir, either by Florina or the Moglene front.

In spite of the enormous difficulties the Serbs swarmed up the face of the mountain, capturing one line of trenches after the other and by the evening of September 18th they seized the summit. In view of the importance of this key position it became necessary for the Bulgarians to recapture it at any cost. With this end in view on September 23rd they resumed the struggle, with fresh troops brought from four different divisions and began a desperate attack on the Serbian positions.

The main attack began on September 24th and reached its fiercest phase on September 26th. This was, up to that time, the bloodiest battle of the whole campaign. The result of the effort was small, however. They only succeeded in gaining a footing in the Serbian advanced trenches but at such a cost that they were incapable of further effort. Their losses had been tremendous. Their companies of 280 men had shrunk to 90 men, and of 15 officers per battalion only an average of four were left. The 2nd Bulgarian Infantry Regiment had 73 officers and nearly 3000 men *hors de combat*.

In addition to being exhausted the Bulgarians were demoralized and the soldiers refused to make any further assaults which they saw could only end in their being annihilated. When the Serbs counter-attacked on September 30th the Bulgarians fled in confusion, abandoning five guns. On October 3rd they voluntarily abandoned the positions of Starkoff Grob, Soviet and Krushograd. The Serbian troops, which were following close on their heels, crossed the Greek frontier, passed on to Serbian soil and debouched on the Czerna Reka, which they crossed at various points, reaching the Bulgarian lines which directly defended Monastir.

The French and Russians also advanced successfully to the north of Florina and soon the whole of Greek Macedonia on the right of the Vardar, with the exception of the crests of that part of the Moglene range against which the Second Army was operating, was completely cleared of Bulgarians. Up to September 23rd, that is to say, before the last effort of the Bulgarians to recapture the Kaymakchalan, the Serbian losses amounted to 10,000 killed and wounded.



NAPOLÉON KNEW that an enemy cannot be shot out of a position, and he was a great believer in the bayonet for the final charge. At one time he fixed a fine for loss of a bayonet. He said, "The bayonet has always been the arm of the brave man and the principal instrument of victory. It is the arm best suited to the French soldier." One of the changes made by Napoleon when he took command of the Army of Italy was to arm the lieutenants and sergeants with musket and bayonet instead of with the sword as formerly.—MITCHELL.

A Machine Gun Scoring Formula

By Capt. M. T. Whitmore, 202d Coast Artillery (AA)

EDITOR'S NOTE: The following article is published with the hope that it will stimulate interest in this important subject and that some one will come to the defense of the present method of scoring. Now that the subject has been opened there is a fine chance for a good argument; "no holds barred" so long as the contestants observe the rule of no acrimonious or vituperative statements.

THE formulae now in use for computing the scores of antiaircraft machine gun service practices appear to have some inherent faults which cannot be overcome without radical changes in form. The disadvantages appear in the mathematical construction of the basic formula and in the influence of the modifying factors. The basic formula is purely empirical and is designed to give effect to the varying conditions of firing, but its construction is such that no check can be made on the weighting of those factors.

The following is the basic formula and the supplementary formulae for the individual factors—

$$C_1 = B_h (B_D + B_Z) + B_r$$

$$B_h = \frac{1500}{S} \left(\frac{h}{100} \right)^{2/3}$$

$$B_D = \frac{D^2 + DR}{3}$$

$$B_Z = 4D \left(\frac{S_g - 50}{S_g} \right)$$

$$B_r = \frac{30}{N} - \frac{10}{N} \left(\frac{500}{r_1} \right)^2$$

It is easily seen that the computation of scores by this method is complicated and laborious. In addition, there are several deficiencies which can be discussed here only briefly. (1) The B_D factor gives effect to varying angular heights by the introduction of R (horizontal range) but the effect is to reduce rather than increase the score for greater angular heights. It would be expected that scores should be increased for the more difficult firing at greater elevations. This is particularly noticeable when applied to 0° approaching courses in which the increasing angular height is unnecessarily penalized. (2) In the B_Z factor the influence of speed makes the result proportional to neither the angular speed nor the linear speed. However, the introduction of slant range, which is intended to reduce the influence to angular speed, in this factor as well as in the B_D factor, gives too great an influence to the distance of the target from the gun position. (3) In the B_r factor, a disproportionate penalty is attached to the rate of fire since the factor becomes negative if it falls below 288 rounds per minute.

In general, the formula is of such nature that alert organization commanders have learned to take advantage of the favorable factors and have influenced the flying of courses which would give them the best "breaks" in the final scores. This is contrary to the purpose of the service practice which should be so conducted as to give full opportunity for firing under extreme conditions. With this in mind and without re-

gard to the similarity of the formulae for gun battery scores, a reasonable approach can be made to the task of devising a formula which will overcome those difficulties.

An analysis of the requirements for computation of relative firing ability will indicate that the basis of the score should be hits on the target. The factors giving effect to the varying conditions of firing should be applied in such manner that they compensate for the differences, thereby reducing the basic score to the common denominator of a set of standard conditions. For this purpose, the following factors and the laws governing their influence should be included. (1) The number of hits used as a basis of scoring should be inversely proportional to the ammunition expenditure. (2) The score should be directly proportional to the square of the distance of the target from the guns. (3) The score should be increased for angular heights greater than 600 mils. (4) The score should be directly proportional to the speed of the target. (5) Some penalty should be imposed for improper functioning of the guns. The following is an outline of the steps to be followed in devising a formula which will include those factors.

Let the basic score "h" be the number of hits obtained on a B9 or B9A target which is 0.788 times the number of holes. Assume a set of standard or average conditions for which each compensating factor is unity and multiply all factors together as follows—

Score for each course = $C_1 = h \times B_A \times B_D \times B_Z \times B_r$.

In this and in succeeding formulae, the present nomenclature will be used as far as is practicable. In each case K will represent the constant for that factor.

Ammunition expenditure B_A . Assume a minimum of 500 rounds per course and that the score shall be inversely proportional to the amount, if more than 500 rounds. Then if A = the number of rounds fired (not less than 500)

$$B_A = \frac{K}{A} = 1 \text{ when } A = 500 \text{ or less}$$

$$\text{Then } K = 500 \text{ and } B_A = \frac{500}{A}$$

Slant range B_D . Assume an average slant range of 1000 yards and that the score shall be directly proportional to the square of the slant range. Then if D = .01 average slant range of course in yards

$$B_D = KD^2 = 1 \text{ when } D = 10$$

$$\text{Then } K = \frac{1}{100} \text{ and } B_D = \frac{D^2}{100}$$

Angular height B_ϵ . Assume that the score should be increased in direct proportion to the angular height above 600 mils. Then if ϵ = average angular height of course in mils (not less than 600)

$$B_\epsilon = K\epsilon = 1 \text{ when } \epsilon = 600 \text{ or less}$$

$$\text{Then } K = \frac{1}{600} \text{ and } B_\epsilon = \frac{\epsilon}{600}$$

Speed of target B_Σ . Assume an average ground speed of 100 miles per hour and that the score should be directly proportional to the speed. Then if S_g = ground speed of the target in miles per hour

$$B_\Sigma = KS_g = 1 \text{ when } S_g = 100$$

$$\text{Then } K = \frac{1}{100} \text{ and } B_\Sigma = \frac{S_g}{100}$$

Rate of fire B_r . Assume a standard developed rate of fire of 500 rounds per minute per gun and that the score should be penalized in direct proportion to the rate of fire when below 500. Then if r_1 = the developed rate of fire

$$B_r = Kr_1 = 1 \text{ when } r_1 = 500$$

$$\text{Then } K = \frac{1}{500} \text{ and } B_r = \frac{r_1}{500}$$

The final formula for computing the score for each course is obtained by substituting the above factors and simplifying, in the formula

$$C_1 = h \times B_A \times B_D \times B_\epsilon \times B_\Sigma \times B_r$$

Substituting

$$C_1 = h \times \frac{500}{A} \times \frac{D^2}{100} \times \frac{\epsilon}{600} \times \frac{S_g}{100} \times \frac{r_1}{500}$$

Simplifying

$$C_1 = \frac{h \times D^2 \times \epsilon \times S_g \times r_1}{A \times 6,000,000}$$

The following is a repeated definition of the terms used in the above formula—

h = 0.788 times the number of holes

D = .01 average slant range in yards

ϵ = average height in mils (not less than 600)

S_g = ground speed of target in miles per hour

r_1 = developed rate of fire of materiel

A = number of rounds fired on each course (not less than 500)

It will be noted that the above formula is simple, practical, and requires fewer preliminary computations than the present method. In addition, the use of simpler compensating factors should encourage wider variation in firing conditions and should give a more accurate measure of the relative ability of firing batteries. The constants used above are, of course, a matter of personal opinion and could be easily changed if it is felt that other standard conditions are better suited for the purpose.

The above formula requires as data (1) the amount of ammunition expended and the number of hits, both of which can be taken directly from original records, (2) ground speed, which must be computed from azimuth, slant range and elapsed time readings, and (3) average slant range and average angular height.

It is believed that, for the latter, the difficulty of obtaining properly synchronized readings, together with the personal and instrumental errors which occur, make it undesirable to use more than two readings of all instrumental data, namely, at the first and last bursts. Those are the only two points of the course at which the readings of slant range, angular height, azimuth and time can be taken simultaneously. The errors in computing averages, due to maneuvering of the target or, for 90° courses, the changing slant range, are small and therefore intermediate readings are unnecessary. Their elimination would greatly simplify the task of computing scores and would encourage more accurate reading and recording of the really essential data.



EUROPE IS FACING A CRISIS comparable to that of 1914, based neither on the fulminations of the "armament interests" nor on the vaporings of professional "war mongers," but on the inescapable realities of the day.—CANADIAN DEFENSE QUARTERLY.

Help Wanted

By Maida Davis Turtle

EDITOR'S NOTE: If you have served a tour in the "Pearl of the Pacific" this will recall memories of your trials; if you have not, be sure to read it,—perhaps it will keep false hopes from mounting too high.

ORDERS to foreign service mean many things to many people but to every army wife they mean the solution of that *bête noir*, the servant problem. That is, in theory. In practice it may or may not work out, depending on the time, the place and the girl.

Visions of perfectly trained servants, quiet and efficient, anticipating one's every wish, take a deal of the sting from States farewells. And the cost! "Why my dear, do you know we had three for the price of one at home." Rosy dreams, all too often shattered.

We had in our kitchen every nationality but an Eskimo—one at a time, however, so as not to cause international complications. And this in four years in an otherwise perfect place.

After much figuring we decided that seventy dollars a month was the maximum we could afford for service (this was in the good old days of 1927). All of our callers, tactfully questioned, assured us that for a family of two we should be able to get a perfect peach for that amount. We were optimistic.

I hied me to employment agents—many of them. Invariably they were wounded to the quick that we expected to drag out a miserable existence with only *one* servant. They could get any number of couples (the woman to do most of the work and the man to accept the miserly check for one hundred dollars each month), but *one* would be difficult.

"And where please? What, way out there; and no street-car? Well, we'll do the best we can for you ma'am. Good morning, ma'am." And that was that.

The household goods arrived and we were desperate. No one in sight. Treking to the club for meals gets tiresome, but an army coal-range is a formidable weapon and not one to be attacked lightly—if at all. Somehow life did not take on that calm unruffled ease of the story-book tropics.

Then one morning the post exchange restaurant man phoned. A Portugese? I'd been warned about the Portugese. But she was right there on the spot. I glanced hopelessly around the house—packing cases everywhere, whisps of excelsior playing hide-and-seek in the breeze, a cold and ominous quiet brooding over the kitchen. I rashly asked Jack to send her up. A bird in the hand, you know.

First sight did nothing to allay my fears. Lush, sixteen, carmine lips and black eyes. Could she cook? She'd never tried. Could she serve? Not very well. Could she clean? Oh, yes! I had grave doubts. But she could sing, and sing she did. Early morning chatter of the mynah birds was completely drowned by her happy voice; a siesta was out of the question; quiet

vanished from the kitchen. In spare moments (and she found more than I thought existed) she tried sitting on the front steps and singing, I told her sternly not to use the front door. Nothing daunted she went out the back door, around the house and again I heard her gayly warbling on the front steps! But she didn't do it long!

Then, praise be, an officer who was leaving said his maid wanted a job. Eagerly I questioned his mother who assured me that Susy was not only an excellent cook and an efficient houseworker, but that she reminded her of a "little white flower." That closed the deal! Susy came to us and peace reigned for several weeks. Then came New Year's day, and as my Lord and Master was in temporary command, we desired to have a reception. But Susy was Japanese and New Year's is sacred to the sons and daughters of Nippon. So very obligingly (so I thought) we arranged our party for Monday, January second, so our domestic could celebrate the first to her heart's content. And she said she was content when I let her go early on New Year's eve. Alas! that a mere Occidental should presume to know when an Oriental is content. On Monday morning Susy 'phoned that she couldn't come back until that night. Seventy-five people expected to drop in at noon and, poor innocents that we were, we depending chiefly on her! What I replied would be deleted from this pure record, but needless to say we had no more use for Susy—which was just as well, for a few months later the "little white flower" presented twins to the world at large.

Peter was round and fat and jolly. He had never done housework before but his "I'll try, mum" to every question was disarming. His wife worked for a neighbor and before I knew it she was working for us too. Over the day's menus I would ask, "Can you make so-and-so Peter?" His inevitable "I'll try, mum," seemed reasonable enough when the so-and-so appeared as scheduled on the table. It was nearly a week before I discovered that Peter's wife cooked our meals in her spare time, dashing madly back and forth from our house to Capt. M—'s. So we lost our Filipino.

The Chinese have such a good reputation that when a long-since-despaired-of agency phoned that they had a Chinese girl for me I jumped at the chance. Helen came. She could cook, she could serve, she could clean, but how long, Oh Lord, how long! She plodded from early morn to dewy eve. She was still washing dishes—for two, mind you—when we turned in for the night. She never finished. I felt like a slave-driver; I simply couldn't bear it, so we let her go.

Mary came with good references as to her ability but with a record of short stays in each place. She was as black as the proverbial ace of spades so she

looked like home to me. A day or two passed happily enough and then Mary began to complain of "the misery" in her jaw. The dentist could find nothing. The doctor could find nothing. She suggested that I "get a little something to kill the pain." Much to her disgust I gave her aspirin. On her trips to town she evidently found a little something to kill the pain, for from one trip she did not return. It was some time before we found we had been harboring a "dope."

Nomba came so highly recommended that the day he arrived I invited people for three dinner parties. He was most temperamental, as becomes the true artist. I was a bit startled when for the first party he baked only one ham instead of the two I'd gotten, blandly explaining that one was enough. For the second dinner we had asked some of our choicest friends including the Department Commander and his wife. We had the party—hastily changed to a most informal supper—but not with Nomba, and thereby hangs a tale, a tale of temperament and temper.

Then came John, a dapper "little brown brother." Spic and span, correct to the last finger-bowl, we thought at last our troubles were over. After a few days we began to hear tentative moans from the servant's room, then a decided moan and then a tuneful wail. A saxophone! Yes, John admitted that he was a "musician" and that unless he could get to town and back every night to play in a dance-hall, he guessed he'd better leave on Sunday and get a job near the bright lights. So we lost John.

Bernice was so busy trying not to miss the commissary man, the plumber, the carpenter, the baker, the candle-stick maker that the dish-washing was neglected. She was fat and dirty and talkative, and had an alibi for everything. But the final blow came when she remarked my struggles on the piano. Yes, I admitted, I'd just begun lessons and they were proving very difficult for a lady of my years. Bernice said she played the piano, and added with a complacent smile, "With me, it's a gift."

Then came a succession. If one lingered as much as three weeks we looked upon him as "an old family servant." There was Lucy who insisted in serving dinner dressed in the cast-off evening gowns of former mistresses; Charles who stayed one day and was driven

away by loneliness; Muri who looked a picture in her flowing kimono but whose English consisted entirely of "Yes ma'am"; Ida, who when told she could not use my comb replied, reasonably enough, "Oh yes I can—I have been ever since I came!"

At last Helen came back, and glad we were to have her too. She never finished from one day's end to another, but so faithful, so loyal, and so good to the kittens that she has a soft spot in our hearts to this day. She was on the dock with leis and tears when we left and I hope she'll be there to greet us when we go back some day.

We all have our moments of wondering just what kind of people the new maid worked for before. Had the former mistress no standards whatever? What seem the simplest requirements are often greeted with alarm or defiance or just plain dumbness by a supposedly experienced maid who demands the pay of a trained servant.

According to many civilians the Army is largely to blame for the situation. They contend that the service people paid higher wages than any one else a few years ago, thereby spoiling the servants. In some of our foreign garrisons steps have been taken to overcome this evil. The Commanding Officer sets a standard wage for certain work and the officers are not allowed to pay more. Also it is the custom to "post" any servant who has committed a grave offense. These measures seem to me most constructive.

In the states one has experiences too. Even the depression has not caused them to dismount from their high-horses. One interviewed me recently (it is scarcely ever the other way 'round) and stated flatly she would not come unless we bought new linoleum for the kitchen! Another hung up the receiver when I innocently inquired her first name. A third objected to the automatic elevator, while still another said eight-o'clock breakfast was too early—all these, mind you, ostensibly looking for work in this year of our Lord 1933.

And so it goes. There is the struggle to find one, the struggle to train her, and then lo and behold, when you bring her up in the way she should go, pretty soon she's gone—or else you are, to repeat the process at a new station, ad infinitum.



THERE ARE TWO DIFFICULTIES in connection with the employment of a large force of mechanized units for which there has been no entirely satisfactory solution forthcoming. One is the method of supply and the protection of supply of the enormous quantities of gasoline required for the maintenance of such a force. The other is the provision of protection for such a force when halted for rest or repairs.—MAJOR W. J. BAIRD.

COAST ARTILLERY ACTIVITIES

Office of Chief of Coast Artillery

Chief of Coast Artillery
MAJOR GENERAL JOHN W. GULICK

Executive
COLONEL W. F. HASE

Personnel Section
MAJOR R. T. PENDLETON

Matériel and Finance Section
MAJOR R. E. HAINES
MAJOR O. L. SPILLER

Organization and Training Section
LT. COL. E. E. BENNETT
MAJOR F. P. HARDAWAY

Plans and Projects Section
LT. COL. G. A. WILDRICK
MAJOR G. R. MEYER
MAJOR R. V. CRAMER

Classification of Coast Artillery Officers

BASED ON GENERAL RATING AS OF JUNE 30, 1933

Ratings	Colonels	Lt. Cols.	Majors	Cpts.	1st Lts.	2nd Lts.	Total
Superior	11	28	36	31	24	5	135
Excellent	20	42	135	172	190	77	636
Satisfactory	6	8	20	45	64	83	226
Unsatisfactory	0	1	0	1	0	0	2
Not Rated	2	0	0	1	0	45	48
Total	39	79	191	250	278	210	1047

CHANGES IN GENERAL RATING RESULTING FROM 1933 GENERAL REVISION OF EFFICIENCY REPORTS AS COMPARED WITH THE PREVIOUS YEAR

	Colonels	Lt. Cols.	Majors	Cpts.	1st Lts.	2nd Lts.	Total
From Excellent to Superior	1	1	2	6	2	0	12
From Superior to Excellent	0	0	0	1	0	0	1
From Satisfactory to Excellent	2	2	5	9	12	15	45
From Excellent to Satisfactory	0	2	0	1	1	1	5
From Satisfactory to Unsatisfactory	0	1	0	0	0	0	1

SERVICE SCHOOL STATUS OF COAST ARTILLERY OFFICERS. THE FOLLOWING DATA DOES NOT INCLUDE OFFICERS WHO ATTENDED THE COAST ARTILLERY SCHOOL PRIOR TO 1919
Coast Artillery School. (Adv. & Bty. Course)

	Cols.	Lt. Cols.	Majs.	Cpts.	1st Lts.	2nd Lts.
Graduates	7	64	181	243	213	203
Now attending C.A.S.				1	13	7
*Non-graduates	33	14	10	6	52	203
No. eligible to attend	0	0	2	2	49	203

*The Cols. and Lt. Cols. are over age limit or attended Leavenworth and not the C.A.S. 8 Majors are over age limit or have attended the C.&G.S.S. and not the C.A.S. 4 Cpts. have attended the C.A.S. but failed to graduate. One 1st Lt. attended C.&G.S.S. & two 1st Lts. attended the C.A.S. but failed to graduate

Command and General Staff School

	Cols.	Lt. Cols.	Majs.	Cpts.	1st Lts.	2nd Lts.
Graduates	16	70	146	14	0	0
Now attending the C.&G.S.S.			8	11	3	0
*Non-graduates	24	8	37	225	275	210
No. eligible to attend	0	0	34	202	274	0

*Cols. & Lt. Cols. are over age limit. 2 Majors are over age limit and 1 attended but failed to graduate. 23 Cpts. are over age limit.

Army War College

	Cols.	Lt. Cols.	Majs.	Cpts.	1st Lts.	2nd Lts.
Graduates	24	38	31	0	0	0
No. now attending		3	4			
*Non-graduates	16	37	156	250	278	210
No. eligible to attend	0	19	153	241	0	0

*Difference in number of non-graduates and number eligible to attend in grades of Cols., Lt. Col., Major and Captain is due to age limit.

Fort Monroe Damaged by Hurricane

Much Rehabilitation Needed Plans Under Way for Expansion

ON August 22-23, 1933, one of the worst storms in the history of Fort Monroe struck this post causing great havoc. It was a terrific northeast storm, the tail end of a tropical hurricane accompanied by a tidal wave that battered the coast. A torrential downpour of rain preceded the tidal wave. Whether it was as severe as the one of August 27, 1667, or that of 1749, is not known. The records show that the first mentioned hurricane destroyed "Algernonne Fort" and the second completely demolished "Fort George;" yet the storm of 1933 did much more damage, as the loss in government property alone has been conservatively estimated at \$1,500,000.

The anti-aircraft gun park, known as Wilson Park, was demolished and the guns damaged. All the non-commissioned officers' quarters facing Bug Light were damaged and many were swept from their foundations. The noncommissioned officers' club was wiped out. A number of the cantonment buildings heretofore used for summer camps were badly damaged and in some cases practically demolished. Tractor, truck and mobile searchlight buildings near Crisp Park were damaged beyond repair. Magazines were flooded. The railroad between the fort and Phoebus was swept off its trestle and the highway bridge that connects the fort with the mainland was badly damaged. The main wharf was battered and about one-third of the planking broken up. The post water supply was interrupted and electric current was cut off.

The maximum height of water occurred about 10:30 on the morning of the 23rd. At that time the tide

was 9.4 feet. Waves washed across the post. The parade ground was under three feet of water. Trees were uprooted, roads blocked and the entire reservation filled with litter from trees, debris, and rubbish washed ashore by the storm.

The 246th Coast Artillery, Virginia National Guard, and a large class of Reserve Officers were driven from the cantonment buildings and were housed with the regular garrison. Refugees filled the post hospital. Although there were many narrow escapes, no fatalities occurred at either Fort Monroe or Fort Story.

On September 16th another hurricane approached the post and although the storm reached its maximum intensity about twelve-thirty in the afternoon, when the wind velocity was sixty miles an hour, it did not damage the post to any great extent. The storm of the 22nd-23rd of August had battered down all of the lighter structures. The waves and wind were so severe, however, that the power line between the fort and the mainland was knocked out and remained out until about eleven o'clock on the morning of the 17th.

The storm of August 23rd placed the Beach Club out of commission but steps are being taken to make this popular gathering place better than ever by the time the summer of 1934 rolls around. Nothing can be done here until the construction of the proposed sea wall reaches the vicinity of the Clubhouse. It is proposed to raise the Club buildings higher, considerably increase the inclosed porch space, increase slightly the outdoor dance floor, increase the size of windows in the main club house, rearrange the kitchen facilities, rebuild the storehouses, bath houses and attendants' quarters to conform to some extent architecturally with the main club buildings and, it is hoped—it must be



Results of the hurricane at Fort Monroe. 1. Ingalls Road near the Catholic Church. 2. Old Point pier, and the building on it, was shoved upward by each passing wave until the decking finally gave way. 3. Rescuers on Ingalls Road. 4. Wrecked mobile anti-aircraft guns at Wilson Park. 5. The water front. 6. The Main Gate. 7. The rescue of Lt. Eldridge, U. S. N. 8. The band stand. 9. The Officer of the Day reports to Post Headquarters in a row boat.

confessed it is only a hope as yet—construct an outdoor salt water swimming pool just north of the kitchen.

During the height of the storm of August 23rd about twenty inches of water circulated through the Casemate Club. Damage was caused to floors and rugs. In addition to repairing the roof and floor of the porch and replacing floors in certain rooms of the main club building, the porch dance floor is being lengthened about fifteen feet.

A large number of the garrison attended the reception and dance given at the Casemate Club on September 9th in honor of the new arrivals on the post. This party was most successful in spite of the warm night. The Beach Club was missed very much. Beer had just been legalized and this night it was served free.

On Sunday afternoon, October 1st, the Club gave a tea dance and reception in honor of Vice Admiral Drax and the officers of the British Cruiser "Norfolk." Admiral Drax arrived recently to assume command of the British Naval Forces in the West Indies and American Waters.

The following Club officers have been elected for the ensuing year:

President . . . Brigadier General Joseph P. Tracy
Vice-President . . . Colonel H. E. Cloke
Secretary-Treasurer . . . Major E. H. Metzger

The Coast Artillery Board

The submarine mining equipment of the Coast Artillery is being developed along several different lines. Pilot equipment for each line of development is made up and the Board is now making comparative tests by actually planting mines in Chesapeake Bay, some loaded, some sub-mines, and some not loaded, in order to determine the relative merits of the systems involved. Some of these tests require the planting of a group of nineteen mines. There is so much shipping in the vicinity of Fort Monroe that it is necessary to take up all mines each night. While putting down and taking up a group of mines may not be considered a great day's work, such an exercise is a considerable task on the troops involved, especially when all the operations are more or less delayed while the Board is making tests.

Another test recently held, and probably of more interest to the troops involved, was the firing of the Solothurn 20 mm. gun. This is such a pretty piece of mechanism that all probably would prefer working on it in preference to other duties. In fact, it is not certain that harbor defense personnel does not prefer the Coast Artillery Board work to that of grass cutting. In general, work for the Board does not fit into the troop training schedules and such work falls into that good old classification, "in addition to their other duties."

The Coast Artillery Board has on file a great amount of information concerning fire control and gunnery, and it attempts to be of assistance to local commanders in solving their firing problems or in improvising fire control equipment. Sometimes the Board will have on hand a special piece of apparatus, undergoing test, that



The Press Carries On

a battery commander may use to considerable advantage in his target practice.

In addition to the assistance furnished by the troops as indicated above, the faculty of the Coast Artillery School is frequently requested to sit in conference with the Board, to assist in solving some of the knotty problems that arise. Such a procedure has been of inestimable value in the past. However, in the great majority of cases, the Board "goes it alone" and solves its own problems, all subject to final action by the Chief of Coast Artillery.

Ever since its reorganization following the World War, the Board has occupied one of the temporary war-time buildings. Money has recently been allotted from NRA funds for the erection of a new brick building. This building will conform, in general appearance, to the buildings of the Coast Artillery School group. It is to be built facing Fenwick Road, with its front entrance about opposite the side entrance to the Chamberlin Hotel. Every effort is being made to provide, within the limits of the money available, a building that will be entirely suited to the present needs and activities of the Board and to such future activities as can be foreseen at this time.

The Coast Artillery School

The opening exercises of the Coast Artillery School were held in the School Auditorium at 9:30 a.m., September 9.

The Departments of Engineering and Artillery each has the same director that headed the department last year but the schedules call for some interchange of in-

structors. The former courses in Advanced Electricity and Advanced Gunnery have been combined into a single advanced Technical Course. Lieutenants Bartlett and Edwards are taking this course. Their work at Aberdeen Proving Ground is scheduled for the month of November instead of in the spring as in recent years. The outdoor work in military field engineering, topography and orientation has been favored by unusually fine weather since the opening of school.

The Battery Officers' Class from the National Guard and Organized Reserve consists of the following:

Captain Henry K. Roscoe, Delaware National Guard.
 Captain Joseph G. Cole, Coast Artillery Reserve.
 Captain Walter P. Ritchie, Arkansas National Guard.
 1st Lieut. Arthur L. O'Leary, New Hampshire National Guard.
 1st Lieut. Lester Cole, Coast Artillery Reserve.
 1st Lieut. Elmer C. Woods, Coast Artillery Reserve.
 1st Lieut. Oswald H. Milmore, District of Columbia National Guard.
 1st Lieut. Adelbert H. Merrill, Coast Artillery Reserve.
 1st Lieut. Van B. Dayhoff, Massachusetts National Guard.
 1st Lieut. Lawrence E. Brooks, Coast Artillery Reserve.
 2nd Lieut. Gibson C. Wolfe, Missouri National Guard.
 2nd Lieut. Philip N. Gallagher, Coast Artillery Reserve.

All of these officers are taking the course in antiaircraft matériel and gunnery. Captain Ritchie was chosen as president of the class.

The Regular Battery Officers' Class consists of twenty-one Coast Artillerymen, Lieuts. Hohn, Deese, Stephenson and Devereux of the Marine Corps, Captain Izzet of the Turkish Navy and Lieut. Muharrem of the Turkish Army.

Fort Monroe personnel exhibited that good old "Can Do" spirit with the C.C.C. processing camp from April to July. Probably due to the hurricane of August 22nd-23rd, Fort Monroe did not maintain a processing camp for the October enrollments. All instructors and students who were in the field with C.C.C. units were relieved in time for the opening of school and many are the weird tales brought back. We still have thirty-five officers with units in the field and one hundred twenty-five enlisted men, some of the latter are located in the IX Corps Area.

First Lieutenant Robert H. Krueger has the honor of being the longest in the field, (since April 19, 1933), and First Lieutenant Robert Berry is the junior in C.C.C. service. (departed Fort Monroe, October 23, 1933). The great majority of the officers have been on this duty for six months. The date of their return is problematical and rumors vary from November 15th to late spring.

New Construction at Fort Monroe

OFFICERS of the Coast Artillery Corps will be interested in what is going on in new construction at Fort Monroe and in what is planned for the future. Last fall the Commanding General appointed a board of officers, known as the Post Development Board, to make a study of the requirements of the Post, both for the present and for the future. This Board was composed of Colonel Harold E. Cloke, C.A.C., Colonel P. P. Bishop, C.A.C., Colonel Archibald H. Sunder-

land, C.A.C., Colonel H. E. Comstock, Q. M. C., Major K. T. Blood, C.A.C., and Captain Harrington W. Cochran, C.A.C. It was appointed by the Commanding General with the understanding it would function throughout the entire year, submitting reports from time to time, and compiling its data with the necessary sketches and maps, the whole to be used as a basis for further expansion, and as a guide for the future development of Fort Monroe.

There has been some sort of fortification on the site of Fort Monroe since 1609. When the present fort was started in 1819 it was thought to be amply large for many years to come. (The old fort occupies only about 25% of the area now known as Fort Monroe.) Based on its growth during the past century, the Board looked into the future and recommended many changes and additions.

The hurricane of August 23rd left Fort Monroe almost completely out of action. It was of such force and intensity that only those who were here at the time can form a picture of it. It was providential that the wind shifted to the northwest on the night of August 23rd, when the next high tide occurred. On the day after the hurricane the picture presented was as if Fort Monroe had been bombarded by a powerful fleet. The permanent batteries were the only ones which remained "in action." The Antiaircraft batteries, the 155 GPF batteries, and the Railway Mortar batteries were "out of action."

After the hurricane a plea was made for funds to rehabilitate the post. It was estimated that \$1,646,246.50 would be needed and this amount was promptly forthcoming from N.I.R.A. funds. It is to be expended on the repair of existing installations or on replacement structures, as follows:

- a. A concrete seawall, 13 feet high above mean low water, from the northern part of Crisp Park to join the old seawall in front of the waterfront officers' quarters. It will be similar to the Galveston seawall, but on a smaller scale. Estimated cost, \$1,000,000.
- b. A new concrete bridge across Mill Creek to replace the old wooden one which was lifted from its foundation by the hurricane.
- c. A central garage on Arsenal road (opposite North Gate), to house all motor trucks of the Quartermaster and the mobile regiments.
- d. A new guard house for Crisp Park.
- e. Five new duplex sets of noncommissioned officers' quarters, costing \$75,000, to replace the ten shacks in the De Russy area.
- f. A new Noncommissioned Officers' Club to cost \$8,000.

The remainder of the money allocated (\$1,646,246.50) is to go for rebuilding the Old Point pier, the Engineer dock, the Quartermaster dock, and the Fort Wool dock, building repairs, repair of roads, walks, sewers, water system, electric system, grounds, telephone communications, observation stations, parapets, power plants, etc.

In addition to the above, funds have been received to build the following:

a. Six duplex sets of Noncommissioned officers, quarters, making a total of eleven duplex sets (22 quarters). These are located as follows:

Four on Reybold Fill (between the Catholic Church and C. & O. Railroad).

Seven in the Liberty Theatre area, three across the street from the three sets now occupied by warrant officers, and four in rear of these latter sets.

b. The completion of the unfinished wing on Randolph Hall.

c. An Ordnance machine shop in rear of the Ordnance Storehouse.

d. Three new magazines near Crisp Park.

e. A new two-story building for the Coast Artillery Board, to be erected on the site of the present building.

f. A new storage garage for the Coast Artillery School.

g. A new bindery for the Coast Artillery School.

The rather sudden allotment of funds for rehabilitation and construction at Fort Monroe seemed to indicate that now would be a propitious time to modernize the old post. The Post Development Board had made many recommendations but, as the fulfillment was considered to be in the distant future, no estimates were submitted. The Commanding General has appointed a board to present a report in which the things achieved should be left out and estimates be made for the remaining items. In order to differentiate this board from the previous Post Development Board, it has been called the Expansion Board. This board turned in a report which has been approved in its entirety by the Third Corps Area. It includes many long-needed improvements, such as:

1. *Mill Creek seawall and fill.*

Mill Creek floods the north shore of the Post several times each year. It is proposed to construct an eight-foot seawall from Mill Creek bridge to Crisp Park, curving so as to connect with the end of the west moat canal. Three large fills will be made behind it. The first will be north of the Quartermaster area and will allow the installation of a baseball field, football field and tennis courts; the second will extend from the east moat canal to beyond Crisp Park and will afford camp space for a brigade, an emergency landing field and a site for the stables; the third will enable the development of an anti-aircraft training center at Crisp Park five times as large as that formerly available at Wilson Park. As the Chesapeake has cut through the Peninsula on each side of Wilson Park, the strip of land north of Crisp Park has been abandoned except for so much of it as will be necessary for a 200-yard rifle range.

2. *Repairs to the moat and moat canals.*

The moat canals need rebuilding badly and the moat is urgently in need of dredging.

3. In order to keep abreast of a similar development in the Hampton Roads area, a sewage disposal plant has been asked for. It will be located near the discharge end of the east moat canal and will empty into Mill Creek.

4. Despite the reduced enrollment of the Coast Artillery School, we still have many officers living off the Post. In addition, we have a number of old wooden sets of which the cost of upkeep is yearly mounting higher. The following quarters have been asked for:

a. Randolph Park: Nine duplex sets (18 quarters), similar to the latest type built at Langley Field.

b. Three modern duplex sets to replace the four old wooden duplex sets, numbers 81 and 95, Ingalls Road.

c. Two modern four-family apartment buildings, larger than the present apartments, on the site of the old wooden quarters, across Ingalls Road north of the Coast Artillery School.

d. Two modern apartment buildings as in c. Inside the old fort.

5. A bachelor noncommissioned officers' building on the site of the laundry. The plan provides for moving the laundry across the street into the Quartermaster Utilities area.

6. The development of the Quartermaster Utility area. This area extends along Arsenal Road, between the west moat canal and North Gate, facing the moat. It will include:

a. A two-story brick building shaped like the letter E with the back of the letter facing the moat. This building will house the Quartermaster offices, the Finance Office, the Quartermaster Detachment, the storehouses, the commissary, cold storage plant, and bakery. Each wing will have railway service. In rear of this building will be an oil-burning central heating plant, the laundry, and a building housing all the shops with storage yard adjacent.

b. Next to the general QM building will be constructed the Central Garage for which funds have been provided.

c. Between the Central Garage and the Ordnance Storehouse will be the new rail transportation shops.

7. A new Coast Artillery School barracks, on the site of the several warehouses in rear of the School, facing the Chamberlin Hotel and Fenwick Road, was asked for. In it will be housed all of the Coast Artillery School Detachment, as well as the students in the Enlisted Specialist Detachment, now quartered inside the old fort. The construction of this building will eliminate the old wooden mess hall of the School and all of the old war-time wooden buildings in the School area now used as classrooms for the enlisted students. The present C. A. S. barrack, which is much too small as a barrack, will be converted into a school building for the enlisted students.

8. The stables are to be moved to the proposed fill on Mill Creek, adjacent to what is known as the "Church Area."

9. The old wooden Liberty Theatre is rapidly deteriorating. It is proposed to put up the new theatre on the corner of Reybold Fill, in rear of the Catholic Church. New noncommissioned officers' quarters are also being erected in this area.

10. A Post School for children, to include the junior high school, has been asked for. It will occupy

the site of the present Liberty Theatre. A playground will be put in beyond Murray Road in rear of the school.

11. Athletics have always suffered at this Post because of the lack of a large gymnasium which could accommodate both the players and the audience. A gymnasium of the type erected at Langley Field has been asked for. It will be erected on the site of "Camp One" where it is readily accessible, where it can be combined with an enlisted club house with summer swimming in the Chesapeake, and where a fresh water swimming pool is already installed nearby.

12. While \$8,000 was provided out of rehabilitation funds for a non-com club to replace the original structure, it is far from sufficient for a suitable club. A club house similar to that erected at Langley Field has been asked for. It will be located on the waterfront, north of East Gate.

13. The Old Point Comfort pier is of wood, with cast-iron piling. As the underwater bracing has long since rusted out, it is easily damaged when bumped by a vessel. It is proposed to replace it by a concrete pier extending at least 100 feet farther from the shore so that New York steamers, and perhaps transports, can dock there.

14. The main barracks of the Post, known as Building No. 5, was built in 1879. Ideas as to what a barracks should be have changed materially since then. It is proposed to place short wings on the rear of each battery section so as to put showers, etc., in the building (instead of across the street as at present), enlarge the kitchens, provide noncommissioned officer's rooms, etc.

15. The Post Headquarters Building was built in

1894 at a cost of \$7,300. The Army has changed considerably in organization since then. The building is much too small. A new building has been asked for, to be located at the corner of Ingalls and Harrison Roads, on the site of the old Sherwood Inn. It will include the Third Coast Artillery District Headquarters, and Organized Reserves, as well as the Post Headquarters. This new building will include air-conditioning equipment which will afford much relief to its occupants, especially when the relative humidity is hovering around 90 per cent.

16. A remodelling of the Post Hospital is being worked out so as to bring the building arrangements up to date. More space for patients will be provided by the proposed addition of two wings. The old isolation building will be remodeled into a modern barrack for the Medical Detachment. A new nurses' home will be included.

17. A new Quartermaster and Mine small boat house is proposed. It will be built on the site of the old one which was demolished a year ago because it was beyond repair.

The estimate of the Board for these improvements to modernize Fort Monroe is \$3,170,301.00 and this amount has been asked for. More than thirty million dollars have been invested in the Harbor Defenses of Chesapeake Bay. If it were to be built today, it would cost at least twice that amount. On a comparative basis, the amount asked for is but five per cent of the value of the investment. In this light, the amount needed to bring this important fortification of the Atlantic frontier up to a modern standard cannot be considered as excessive.

Notes from the Philippines

By *Lieut. W. I. Allen, C. A. C.*

Recreation and Athletics, 60th C. A. (AA)

THE rainy season in the tropics, especially when it rains and rains a whole month, gets on one's nerves. This applies more to the soldier than to the officer. During the dry season the soldier is outdoors playing baseball, soccer and other games. When the rains descend his recreation is limited, and if he is not watched he is likely to become discontented and grouchy.

In order to combat this condition the 60th Coast Artillery (AA) has endeavored to get *all* men interested in some form of athletics during the rainy season. Basketball and bowling take care of some of the men. In order to provide amusement and recreation for the remainder, the regimental commander obtained the use of an old barracks, and, salvaging material, has had this building converted into a gymnasium.

A badminton court has been laid out, a diamond and

equipment for indoor baseball has been provided, a small bore range is being constructed, and punching bags and other gymnasium equipment have been furnished. In addition boxing and wrestling rings have been set up. Two competent instructors conduct large classes in these sports every afternoon. In order to furnish still more facilities for recreation, each battery has installed in its barracks one or more of the following:

A shuffle-board court—This is easily installed and costs but little. Any squad room will furnish sufficient space. Hand or deck tennis court—Can be put in any squad room. Bunks may have to be moved.

Badminton court—This game has proved very popular and certainly provides plenty of exercise. It can be installed in any squad room by moving the bunks to one end of the room.

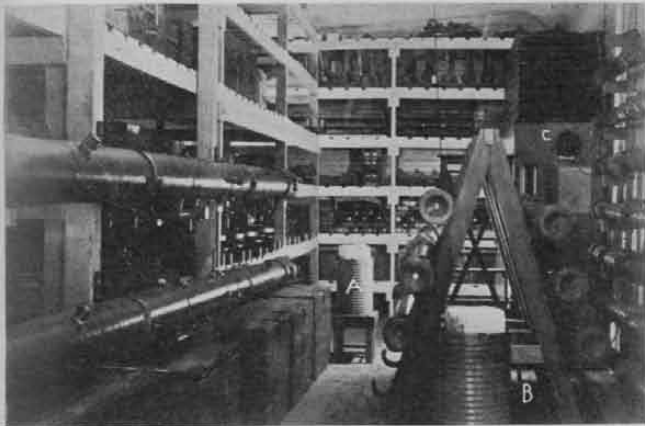
Ping-pong tables.

The results obtained are worth many times the effort and cost involved. The men are happy and contented; they are kept in fine physical condition and are better soldiers.

Storage and Preservation of Fire Control Instruments

In addition to the problem of keeping its powder dry, the Army in the Tropics has a formidable problem in keeping its lenses clean.

An average relative humidity of 70% during the period December, 1931, to May, 1933, inclusive and an average relative humidity of 82% for three months,



The dry room at Fort Mills. A indicates the calcium chloride with container, B the heater, and C the rheostat for fan.

June, July and August of the 1933 wet season, indicate the favorable conditions for the growth of fungi that render optical elements of instruments not protected by dry rooms unserviceable in from three to six months of tropical service.

To overcome this difficulty, several methods have been tried:

- (a) Semi-annual dismantling and cleaning.
- (b) Sealing instruments in air tight containers.
- (c) Storage of instruments in dry rooms.

Semi-annual dismantling and cleaning of all fire control instruments is impractical due to the tremendous number of man hours of labor by specially trained instrument repair men required for such a project.

The smallest optical instrument in common use for fire control is the field glass, Type EE. The average time required to clean and adjust one pair is four man hours. At the other extreme is the 15 foot coincidence range finder the servicing of which will require a skilled mechanic's services for an average of 14 days.

To reduce this demand for skilled labor, storage in air tight containers has been tried without success.

One attempt that was entered into with much enthusiasm was the storage of instruments in air tight steel containers in which the air had been replaced by nitrogen. Tests of this system for six, nine and twelve month periods were unsatisfactory. The instruments on being removed were in no better condition than those in storerooms and stations for a like period of time.

Storage in cartridge cases were likewise unsatisfactory.

Theoretically, these methods should produce better

results. However, with equipment available locally, it is not possible to sufficiently reduce the moisture content of the instruments and the containers before sealing and maintain an absolutely air tight seal of the container for long periods of time.

The most promising method of storing fire control instruments where they will be available in serviceable condition in the quantities required for war has been in dry rooms.

The dry room used for storage of fire control instruments at Fort Mills is located inside of a concrete warehouse. Two walls, the ceiling and roof of the space used are six inch reinforced concrete, the remaining two walls are double tongue and grooved lumber with a six inch dead air space.

The inside dimensions, 14'x14'x40' provide dry storage for all fire control instruments. Ninety percent of the instruments listed in Ordnance Standard Nomenclature Lists F 1-2-3 can be found in this room.

Uniform temperature is secured by using two home-made 1000 watt electric heaters and a 12-inch variable speed ventilating fan run as an exhaust fan. Uniform humidity is secured by using two 50 lb. containers of calcium chloride.

The dry room was made reasonably air tight by caulking around the window and weather stripping at the door. Shelving is made from 1'x6' strips separated by 2" spaces which provide for free circulation of air in racks which hold the small instruments.

In operation, one calcium chloride container is placed at each end of the room, the heaters are located on the floor in the center of the room and the fan is installed at the top center of the inside wall where it exhausts the air from the dry room into the warehouse.

The calcium chloride containers are obsolete 12" mortar powder cans, M1901. Fifty pounds of calcium chloride is suspended in a copper screen basket at the top of each can. Twice a week the liquor that collects at the bottom of the can is removed and boiled over an open fire. The solid calcium chloride recovered in this manner is returned to the dry room. The net loss of calcium chloride is about 25 lbs. a month.

Two commercial electric oven heating elements were first procured for the dry room at a cost of \$18.00 each. These were unsatisfactory. The heater in use consists of a reinforced concrete block 18" square and 4" thick in which 10d nails have been embedded. Around these nails 7 feet of No. 21 gauge coiled nichrome resistance wire is strung to form a heating element.

It has rarely been necessary to use more than one heating unit, to maintain an average room temperature of 90° F. Minimum temperature has been 84° F. Maximum temperature has been 96° F.

The fan is usually operated only during working hours and when shut off, the opening in front of the fan blades is closed by a wooden shutter.

The monthly cost of operation of the dry room is approximately—

25 lbs. calcium chloride at \$.032	\$0.80
500 K. W. electricity at .01 per K. W.	5.00

Total\$5.80

The dry room has been in operation since April, 1932, its value is best indicated by the statement of Mr. P. J. Lumley, Civilian Ordnance employee who has been in charge of the repair and installation of fire control instruments at Fort Mills for 10 years:

"The fire control instruments cleaned and adjusted by the Instrument Repair Shop in May, 1932 which were turned over to the Property Section for storage are in serviceable condition and ready for issue at the present time (August 26, 1933)."

The improvement of storage facilities obtained by using a dry room is the result of trial and error methods. While it is a reasonably satisfactory solution to an ever present and serious problem, it is believed that from the commercial developments in the air conditioning field a unit could be secured that would automatically and continuously provide the proper storage conditions for fire control instrument warehouses. But until there is an improvement in economic conditions the local installation operated by the loyal, intelligent and energetic enlisted personnel of the Fort Mills Ordnance Detachment will provide fire control instruments to meet any emergency.

Adapting the Scott Sight to 155 G. P. F's.

The need for a telescopic sight for 155's used against naval targets has long been recognized. Such a sight and the sight mount for it has been designed and approved. Coast Artillery Field Manual, Vol. I, is quoted as follows: "Sight Mount, M-4, has been adopted as standard for use with the 155 mm. gun against naval targets. A degree-graduated panoramic sight, M-1917, M-II-A-1, or a modified 2-inch telescope, M-1909-A-1, is used on the mount." However, battery commanders have generally been unable to obtain this

sight and sight mount. A few of them have been made but not for issue to the service, and the drastic cuts in appropriations have apparently precluded their even being mentioned in the budget for 1935.

As long ago as 1924, Lieutenant Colonel James B. Taylor, when in command of the 51st Coast Artillery, obtained four Telescopic Sights, Model 1898 (Scott), had them fitted with adapters so that they could be used on the quadrant of the 155 mm. gun in place of the panoramic sight for Case II firing.

Recently Captain A. J. Bennett, commanding Battery C, 92d Coast Artillery (PS), became interested in the same sight; with soldier labor, and the cooperation of the local ordnance officer, the adapter shown in the accompanying photograph was manufactured. This work required the manufacture of a small drum with a spline on it to hold the sight to the sight bracket. A piece of angle iron machined to fit securely was attached to the top of this drum and to the sight. Four of these sights were used in Captain Bennett's battery for their last service practice. The practice was fired at the high speed target, Seacoast M-1. Results were quite satisfactory.

The adjustment of the deflection angle in the Scott sight is rather limited, necessitating a provision whereby a lead of two degrees could be set up in the sight in addition to that provided by the scale in the sight. This was provided very simply by drilling a series of three holes, one half of the hole being in the top surface of the drum and the other half being on the lower surface of the angle iron. By means of these holes and a lock pin, zero or two degrees right or left additional deflection can be obtained. This is done by unlocking the lock screw in the top of the drum and traversing the sight right or left until the proper holes align, inserting the lock pin and tightening the screw. A combination spanner wrench and screwdriver was made and attached to the sight for this purpose, permitting rapid and secure means for shifting this additional deflection. The principal objection to this sight is the small field of view. It is believed, however, that this disadvantage is far outweighed by the advantage of the larger and clearer image.

Fort MacArthur Notes

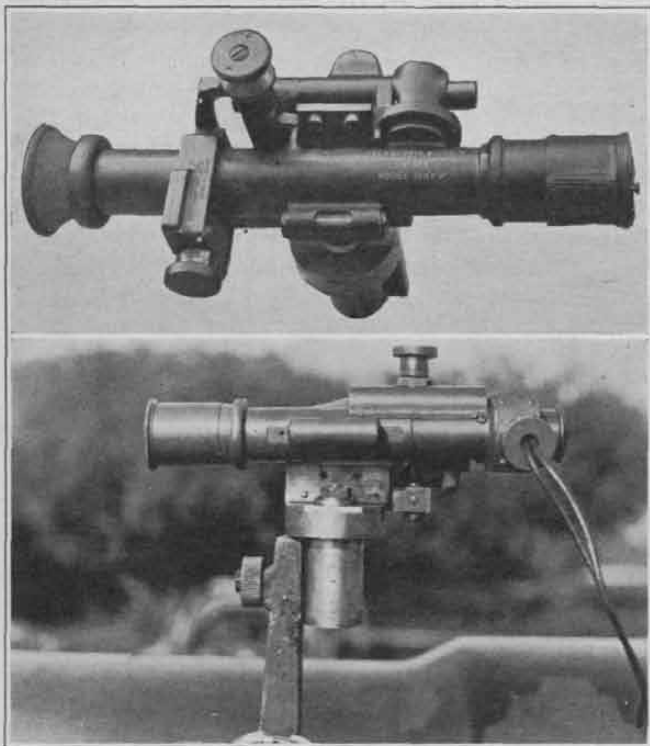
By Lieut. L. A. Denson, C. A. C.

New N. C. O. Quarters

OF interest to all Coast Artillerymen are eight new double sets of noncommissioned officers' quarters now being erected on the lower reservation at Fort MacArthur. These sets are made possible at this time through sub-allotment of N. R. A. funds from amounts placed at the disposal of the War Department.

Plans have been energetically pushed by Captain Francis I. Maslin, Q.M.C., constructing Quartermaster. Bids distributed to more than sixty builders in Southern California were opened on October 30, and construction, scheduled to begin on November 10, is to be completed at an early date.

Here's what the lucky occupant assigned one of these sets finds. As he approaches he sees a double set of



The Scott Telescopic Sight as adapted to 155 G.P.F's.

grey stucco, with red tile roof, 53' front by 28' in depth. A double garage is at basement level in the center of each set, reached by a sunken driveway from the front. Each building has a neat yard of green grass, and a profusion of flowers, for which Southern California is justly famous.

Crossing a corner porch, he enters a hallway with built-in closet, then a spacious living room 13 x 17 feet with an open tiled fireplace. All rooms have shining hardwood floors. A dining room opening off the living room is 13' x 12' and—to his wife's delight—has built-in cabinets. The kitchen, 12' x 12', has built-in cabinets too, with a tiled drain board, gas range and every modern convenience. Upstairs he finds three bedrooms 14 feet square, a hallway and a roomy tiled bath. On the second floor too he finds a neat open porch with grilled iron railing; and the basement, he discovers, has a storage room, a gas-fired furnace, steam-heating the house throughout, and a laundry with built-in tubs.

Many a drab year spent in rickety, broken down, antiquated quarters enables him to appreciate his well earned reward as no one else could. Adequate quarters at last—at long last! He heaves a sigh of utter contentment.

Other Post Improvements

Further smaller allotments are making possible a number of other long-needed Post improvements.

A modern concrete wharf is to replace the small wooden pier in use at present.

The lower floors of all large officers' quarters are to be replaced with hardwood, completing the reflooring of some four sets which could not be undertaken last year. The four midget sets of officers' quarters are to be refloored with Douglas fir, and the underpinning is to be braced and replaced until the floors are actually level. The upper reservation will have 6,400 feet of new gas mains.

Six double garages have been moved across N. C. O. road and combined in one neat line with concrete floors and ramps.

An automatic sprinkler system is to be installed along the western edge of the parade ground fronting Pacific Avenue. Green grass and flowers will replace the sunbaked, cracked ground here, and add much to the appearance of the Post.

Numerous improvements to roads throughout the Post will be effected.

Notable among the improvements will be the substitution of an underground electric lighting system for the overhead system now in use on the lower reservation.

The Quartermaster central warehouse will be doubled in size, permitting a much needed consolidation of Quartermaster activities.

Numerous other smaller improvements are included in this, the most extensive program of its kind undertaken at Fort MacArthur in years.

Training Under Difficulties

The 63rd C. A. (AA) has carried on Artillery training continuously despite the tremendous demands of the C.C.C. in the Fort MacArthur District, which now



A typical set of new N. C. O. quarters at Fort MacArthur.

has expanded to include more than 7000 men in 36 camps, the largest winter district in the IX Corps Area.

With most of its officers and noncommissioned officers absent on CCC duty, the artillery training problem has been met through combining all available men as one AA Battery.

During September the regiment trained as a search-light battery. Despite the evident difficulties such a training problem presented the efficacy of training was strikingly demonstrated on the night of October 2, when the newly formed "battery" picked up an enemy plane from March Field at 8,000 feet seven successive times, with an average pickup time of but 12 seconds.

October training has been as a machine gun battery, while November's is to be as a gun battery.

The 62nd Coast Artillery (AA), Fort Totten

By Major S. S. Giffin, C.A.C.

YOUR correspondent arrived at the post on September 1 for duty with the 62d to find the regiment in the doldrums which comes after the storm of summer training. Perhaps it is not correct to call the past two months a doldrum period because there has been plenty to do and the time has been well spent in overhaul and maintenance of the quarters, motor transportation, and the post in general.

During the C.C.C. hegira the regiment lost most of its senior battery officers, leaving us very short handed of captains and first lieutenants. This threw all the second lieutenants into responsible positions commanding batteries. This responsibility was accepted by them and the manner in which they have gotten away with the job is a source of satisfaction to the regimental commander and other field officers. Their duties were performed under a severe handicap because the regiment is about 25 per cent short of its authorized strength—15 per cent are on C.C.C. and 10 per cent vacancies exist.

In this regiment a very commendable spirit of cooperation exists between the Coast Artillery Reserve regiments on one hand and the 62d on the other. Early in September it was proposed that each reserve regiment in turn visit Fort Totten on successive Tuesdays

and take over the regiment on that day for parade. Colonel Conklin, the regimental commander, approved the suggestion whole-heartedly and a very efficient plan of taking care of these reserve units has been worked out which we call "Formation A." It insures each individual reserve officer receiving the utmost attention from the time of his arrival on the post until he leaves. This applies not only to his military duties but to the social occasion as well. After the parade the visiting unit usually holds a regimental dinner at the picturesque Fort Totten mess, ending the visit with an informal hop. Unfortunately the weather has not cooperated and some of the regiments have been unable to be with us. Colonel Cushing and the officers of the 513th were first on the list, followed by Colonel Dahl and the 910th. Colonel Azel Ames and the 602d lost their big chance due to rain on October 24 when General Gulick visited the post. The 602d was to run the review but the rain spoiled everything. They were present for the reception, however, and hoped up to the last minute that the weather would be favorable for the review.

The regiment enjoyed a visit from General Gulick on October 24 but, as mentioned above, the rain did its worst. A guard of honor consisting of two batteries commanded by Lieutenant Roth escorted the Chief from General Cole's quarters to the parade ground where the regiment was drawn up for inspection with "bells, whistles and everything." A miniature, synthetic, tactical situation was in place on the parade ground with batteries emplaced, C. P.'s established, communications installed and motor transportation parked on the adjacent roads (this regiment has some A1 transportation). In addition the 2d Battalion had turned out in field equipment and had pitched shelter tents with individual equipment displayed. Then the rain came down in sheets. Being in full field equipment the 2d Battalion got the breaks because it could don raincoats but the 1st Battalion had to take it. General Gulick hurriedly completed his inspection and afterwards inspected the mobilization equipment of the 2d Battalion. It is believed that he was pleased with the inspection. Colonel Conklin received a letter later which was filled with high praise. An extract reads as follows: "The 62d Coast Artillery (AA) is without doubt the most important organization at the present time in the Coast Artillery Corps. It is a source of great satisfaction to me to know from personal observation that the administration and training of the regiment is being carried on in a highly efficient manner."

A reception and tea for General Gulick was held at the Fort Totten Mess by Colonel and Mrs. Conklin, assisted by the officers and ladies of the post. General John J. Byrne and Mrs. Byrne accompanied by Major Philip Rhinelanders were guests. General Byrne com-

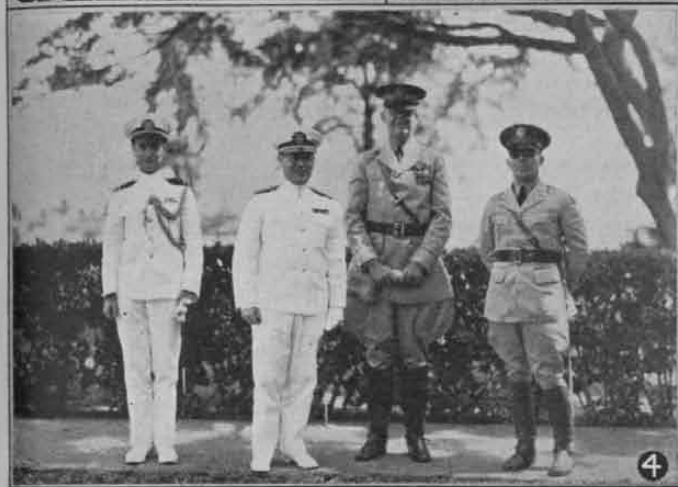
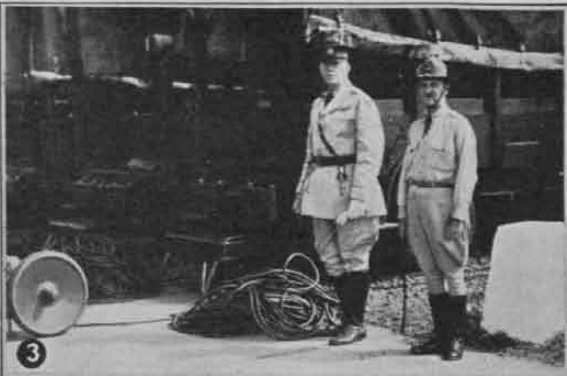
mands the New York Coast Artillery Brigade. General and Mrs. Cole (the District Commander) were also in the receiving line.

The 62d "does its part." Most of us have signed the NRA pledge three or four times and in addition (and more important) have attended NRA parades in the vicinity and assisted the Blue Eagle in its flight. We have paraded in Port Chester, College Point, Patchogue, and Flushing. The band has helped out in other places. The Flushing parade was the most impressive and the 62d turned out with all the strength it could muster. Miss NRA liked the looks of the regiment and made her landing from the Good-year blimp in a field close by our forming up place.

A good part of our training has been devoted to the preparation for field service. Mobilization equipment has been checked over, shortage noted, and requisitions prepared. Packing boxes and crates have been prepared and everything placed in readiness to ship at a moment's notice. Where are we going? You never can tell. If something pops we will be ready—in 30 minutes we believe. Our antiaircraft machine gunners are also able to function with infantry mounts. It's a little difficult to improvise mules and carts but we do very well unless the command "Gallop" is given.

A number of changes in personnel have occurred. Major Giffin and Lieut. Tom Cranford have arrived and been put to work. Lieutenant Cranford is not having much luck practicing his Japanese on the New York State unemployed. We have had as many as 150 of these working on the post at times—a break for the fatigue details. Lieutenant C. C. (Coke) Carter is again in our midst after having escorted the Gold Star Mothers to France and back. He is holding down the Adjutant's desk at present. Captain Jackson, the searchlight Moses, has been ordered to the Engineer Board at Fort Humphreys where he can give his talents a little more latitude. About 10 new West Point lieutenants have been with us since September 10. Four left on the November 1 transport. All but three will leave us when the next boat leaves. The shortage of space on the *Chateau Thierry* was caused by the departure of Colonel A. J. Cooper and family who is taking his post at Kamehameha, Hawaii. The Coopers are seven, as you know. One is a newly graduated lieutenant in the Air Corps (Johnny, to you). The two oldest girls (Ella and Ona) are at Vassar. Even so there were four left to board the good ship *Chateau Thierry*. Good luck, Coopers.

The high point of the social season at Fort Totten was the Hallowe'en Dance on October 28. This affair was given by the Coast Artillery Reserve Officers Association of New York and was under the active management of Major Charley Clark of the 910th. This party was well attended and brought forth a varied assortment of masquerade costumes.



1. The 240 mm. howitzer which was installed on a pedestal mount in the wilds of Oahu. 2. Maj. Gen. Briant H. Wells awards championship trophies to the winning Fort Shafter baseball team. 3. Brig. Gen. R. S. Abernethy inspecting matériel of the 64th C. A., with Col. R. H. Williams, the regimental commander. 4. Lt. T. B. Dugan, USN, Rear Admiral Greenslade, General Abernethy and Lt. J. R. Lovell, taken when the Admiral called on General Abernethy.

Photographs by the U. S. Signal Corps

Hawaiian Separate Coast Artillery Brigade News Letter

By Lieut. John R. Lovell, C. A. C.

Brig. Gen. R. S. Abernethy, Commanding
Chief of Staff—Colonel Arthur L. Fuller, CAC.
G-1 Lt. Col. W. V. Carter, A.G.D.
G-2 Captain E. T. Conway, CAC.
G-3 Lt. Col. A. G. Campbell, CAC.
G-4 Major F. Mountford, CAC.

HAWAIIAN legend and poetry have described Diamond Head as a couchant lion. Had this lion been alive on a certain recent date he would have lazily risen to his feet, stretched himself, and faced about to observe the spectacle in rear of his resting place.

The Harbor Defenses of Honolulu were on parade. The affair was in the nature of a double celebration, honoring the Harbor Defense Swimming Team, and formally opening the new parade ground.

It was a marvelous setting for such a ceremony. A bright blue Hawaiian sky with small fluffy clouds, overhanging a broad expanse of azure sea. The island of Molokai was dimly outlined on the horizon. Fort Ruger itself, with all its colored foliage and well-kept lawns, never seemed more beautiful.

The Department Commander, Major General Briant H. Wells, presented the National Y. M. C. A. Service Swimming Trophy to the Harbor Defense team, which has won this distinctive honor for six consecutive years. This trophy is competed for at service Y. M. C. A.'s throughout the United States and its possessions.

Many distinguished persons attended the function. Among those present were Governor and Mrs. Lawrence M. Judd, Chief Justice Antonio Perry, Brigadier General R. S. Abernethy, Colonel and Mrs. Homer B. Grant, Colonel Richard H. Williams, all of the C. A. C., and Colonel D. P. Hall, commanding the Marine contingent at Pearl Harbor, Captain and Mrs. W. W. Bradley, Captain of the Yard at Pearl Harbor, Commander Jack Bayliss, Commanding the Coast Guard in Hawaii, and many others.

The Sector tennis season has just been completed. There were five teams in the league and the competition was better than ever. The Harbor Defenses of Honolulu team, composed of Lieutenant Colonel William E. Shedd, Captain John F. Bohlender, Medical Corps, Lieutenant Wayne Barker, Lieutenant Lucius B. Cron, and three enlisted men—Rogers, Castle and Carter, won the Sector tennis trophy. Inter-battery boxing and basketball competitions have already commenced.

Colonel Williams' Departure

The 64th Coast Artillery arranged a special ceremony in honor of its departing commanding officer Colonel Richard H. Williams. With the regiment formed under arms on the parade ground, the ladies of the garrison presented leis and gifts to the Colonel and Mrs. Williams. Lieutenant Colonel W. W. Hicks made a very touching aloha speech.

Colonel Williams' last official act was to present the Inter-battery Athletic Supremacy Trophy to Captains John H. Wilson and William G. Brey, commanding Batteries A and L, 64th Coast Artillery, respectively. The personnel of the regiment then presented Colonel Williams with a miniature replica of the trophy.

The command formed a double chain of sentinels at "Present Arms" from the Colonel's quarters to the gate leaving the post. The Colonel, escorted by the 64th Coast Artillery Band, left the post and proceeded to the boat, where the Second Battalion, commanded by Major C. S. Doney, and the officers and ladies of the garrison bade a final farewell.

155 mm. GPF Gun Sights

Officers of this Brigade who are assigned to 155 mm. GPF gun batteries were involved in a discussion as to whether or not the sight clamp should be left clamped or unclamped during target practice and other firings. Captain Maitland Bottoms made several experiments, and the majority of officers concerned agreed that they should be left unclamped, with but a slight tension on them during target practice.

Executive officers of firing batteries should be careful that the springs that bring the sight bracket into position after the gun has been fired are sufficiently tight. If this is true, the cross-level bubble on the sight should be centered, or very nearly centered, after the first round is fired.

240 mm. Howitzer Installations

Battery F, 55th C. A., commanded by Captain Arnold D. Amoroso, and assisted by Lieutenant John L. Goff, recently installed a 240 mm. howitzer on a pedestal mount somewhere in the wilds of Oahu. The guns were towed in three loads by prime movers to the position, and after a four-day practice, Captain Amoroso and his men conducted a special demonstration before Major General Briant H. Wells, Brigadier General R. S. Abernethy, and the officers of the Coast Artillery Brigade.

The guns were transferred from the traveling position to the firing position and the gun drill commenced in one hour and 40 minutes. Some difficulty was experienced in getting the gun into battery in the cradle,

and if this trouble had been eliminated the time would have been one hour and 18 minutes, which is considered exceptionally good. General Wells commended Captain Amoroso and his battery and briefly related to the officers present the history of this type of armament. It might be of interest to know that a Field Artillery battery required something over three hours for a similar installation.

Personals

Congratulations to Lieutenant Colonel A. G. Campbell and Major LeRoy Lutes on their recent promotions.

Lieutenant Colonel W. V. Carter, Major Frederick A. Mountford, Lieutenant Colonel William E. Shedd, Major Martin J. O'Brien, and their families, recently visited the Kileaua Military Rest Camp near Hilo.

Captain E. B. Schlant, Judge Advocate Extraordinary on the Brigade Staff, has been elected president of the Parent Teachers Association of the Aliiolani School in Honolulu.

Lieutenant Colonel F. Q. C. Gardner has been assigned to duty as Chief of Staff of the Brigade, replacing Colonel Arthur L. Fuller who returned to the mainland in August. Colonel Fuller will be the new commanding officer at Fort Barrancas.

Mr. Upton Close, eminent writer and lecturer, has just returned from the Orient. While in Honolulu he gave several startling and sensational lectures on the Japanese situation.

Warrant Officer Ammon E. Gingrich, leader of the 16th Coast Artillery Band, has left Hawaii. His departure was a distinct loss to music lovers of the Territory. His band had radiocast every Tuesday evening for the past three years, and questionnaires revealed that it was second in popularity only to the evening news summary. Station KGU arranged a special Aloha program in Mr. Gingrich's honor.

Lieutenant Charlie Wolff of Fort Ruger has earned the sobriquet "Will Rogers" since his humorous radiocast over KGU recently.

Fort Kamehameha

At the regular monthly regimental parade of the 15th Coast Artillery, the Regiment was formed in line of battalions in line of close columns. For the edification of former members of this command who may wonder where such an extensive parade ground could be found here, the area is that between Battery Hasbrouck and the main road leading into the post, which is all filled in and is no longer the marsh land of former years.

Finis—Tentative Infantry Drill Regulations

Circular No. 53, War Department, dated October 19, 1933, sounds the death knell of the Tentative Infantry Drill Regulations upon which so much time and effort have been spent during the past year. A command will no longer be old-fashioned when it uses the formations as prescribed in the Infantry Drill Regulations, 1929 edition.

Panama Canal Department News Letter

By Captain P. W. Lewis, C. A. C.

Department Artillery Officer
Colonel Percy M. Kessler, C. A. C.

Fort Amador
Colonel Russell P. Reeder,
4th C. A. (AA)

Fort Sherman
Colonel Clarence G. Bunker,
1st C. A.

Fort Randolph
Colonel Richard I. McKenney,
1st C. A.

TWO birthdays were celebrated down here near the equator on the same day. The one celebrated at Fort Amador was the 112th anniversary of the Fourth Coast Artillery. Organization Day was selected as August 21st, the anniversary of the day that a part of the regiment particularly distinguished itself during the Mexican War at the battle of Contreras. Due to the gallantry of Battery G during that battle, General Winfield Scott decreed that it should be the permanent color battery of the regiment; and to this day two privates, with outstanding qualifications, are selected monthly by the noncommissioned officers of the battery for the honor of being Color Guard.

During the celebration this year two stirring addresses were delivered to the assembled regiment by the Commanding General, Pacific Sector, Brigadier General Thomas W. Darrah, and by the Department Commander, Major General Preston Brown. Following the ceremonies, the remainder of the day was devoted to festivities of various sorts: boxing bouts, swimming party, basket ball game, bus sight seeing excursions and organized parties.

Historical Sketch of the 4th C. A. (AA)

The Fourth Coast Artillery was organized in 1821, disbanded as a regiment in 1901, and reorganized in 1924. Batteries C, D and E of the regiment participated in the War of 1812. Battery D, organized in 1786, the oldest battery of the Coast Artillery Corps, held Fort St. Philip on the Mississippi River when General Andrew Jackson decisively defeated the British at the Battle of New Orleans.

Since its formation in 1821, the history of the 4th Coast Artillery has been that of the United States Army. It has been present as a whole or in part in all our major wars, and has participated in over 150 battles and engagements. The 34 battle streamers borne on the pike of the regimental color tell only a part of the story. It has defeated many of the fiercest Indian nations of the past: Creek, Seminole, Sioux, Modoc, Nez Perces, and Apache. It has from time to time served as artillery, infantry and cavalry.

During the Mexican war the valiant deeds of the regiment shed unfading luster upon American arms. At the Battle of Buena Vista Lieutenant John Paul Jones O'Brien, with a section of two guns, covered himself with glory. At the critical moment of the battle, when attacked by the powerful Mexican reserve, with himself wounded and most of his cannoneers out

of action, this gallant officer fought his guns furiously, pouring round after round of canister into the enemy's ranks, and winning the highest praise from the foe who was held in check by these guns that were "lost without dishonor."

At the battle of Contreras the Fourth Artillery, forming the right of the line, rapidly pushed forward; and G battery, the first to enter the enemy's ranks, "recaptured with just pride and exultation" the guns lost by O'Brien at Buena Vista. These guns now repose on the walls of the Administration Building at West Point as an impressive reminder of the daring deeds of the regiment.

The outbreak of the Civil War found the Fourth once more engaged in Indian expeditions. It was rapidly assembled for the great conflict. To detail the numerous battles and engagements of this war in which the Fourth took part is impossible in the short space of this sketch, for the regiment was split up, and we find one or more of the batteries engaged in every important campaign.

Batteries G and H participated in the Spanish War at Santiago. In 1901 the Artillery regiments were broken up into companies, and the Fourth lost its identity until 1924, when it was reorganized. Battery B—then Battery C, 51st Artillery and Battery C, 43rd Artillery—participated in the World War in the Toul sector. Battery C also served in France as the Third Separate Antiaircraft Battery.

Battery C first garrisoned Fort Grant (Naos Island) in 1913. A year later Batteries A and D took station at Fort Amador, and Headquarters and I Battery followed in 1916.

First Coast Artillery Celebrates

On the same day the First Coast Artillery, commanded by Colonel Clarence G. Bunker, celebrated its organization day at the two posts of the regiment—Fort Sherman and Fort Randolph. At Fort Sherman a distinguished gathering faced the troops drawn up for formal ceremonies. After the review and inspection three medals were awarded to Sergeant Charles M. Lewis for record-smashing performances in the 50 and 100 meter swims and the diving contests.

Music was furnished by the Fort Sherman Band, playing among other selections the now famous "First Coast Artillery March" composed by Band Leader Muller, whose compositions of martial airs caused him to be well known at West Point. Many old timers will remember Mr. Muller at the piano when learning the "one, two, three, turn" dancing steps at Cullem Hall.

History of the First C. A.

The First Artillery was organized in 1821. The formation of some of the older batteries are as follows: Headquarters Battery from Melvin's Light Artillery—1813.

Battery A from Gates Company of Artillerists—1798.

Battery B from Crane's Company—1812.

Battery C from Stribling's Company—1815.

Battery D from Payton's Company—1815.

During the War of 1812 the regiment participated in the following engagements and expeditions: Capture of York (now Toronto), Battle of Stony Creek, second capture of York, Expedition down the St. Lawrence River, Defense of Oswego, and the Battle of Plattsburg.

In the Mexican War the regiment participated in all major engagements: Palo Alto, Resaca de la Palma, Vera Cruz, Cerro Gordo, Contreras, Cherubusco, and Chalpultepec. Due to conspicuous gallantry on August 20, 1847, this date has been designated as Organization Day. (This date falling on a Sunday, the celebration was held on the 21st.)

In December, 1860, South Carolina seceded from the Union. Batteries E and H, under the command of Major Anderson, were stationed at Fort Moultrie. Afraid the Southerners would attempt to capture the fort, Major Anderson destroyed the guns and moved his command to Fort Sumpter, where the opening shots of the war were fired. The regiment participated in the Peninsula and South Carolina campaigns in 1862-63, and at Fredericksburg, Chancellorsville, Gettysburg, Spottsylvania, Cold Harbor, Petersburg and Appomattox. You will note that the regiment was in the first and last engagement.

In the Spanish-American War the regiment took part in the campaign against Santiago, Cuba, and in the World War participated in the St. Mihiel and Meuse-Argonne offensives.

In 1924, upon reorganization of the Coast Artillery Corps, the old First Artillery became the First Coast Artillery, consisting of Headquarters and Band, Headquarters Battery, and nine firing batteries. Of these, only Headquarters and Battery E were active organizations, being stationed at Forts Randolph and de Lesseps, Canal Zone. In April, 1912, the regiment was again reorganized, with Headquarters, C, F and H at Fort Sherman, and A, B, D and E at Fort Randolph.

General Preston Brown Departs

One of the vicissitudes of Army life is the breaking up of friendships born of hardships endured together. One of these "breakings-up" occurred recently upon the departure of Major General Preston Brown who goes to the VI Corps Area at Chicago. As he boarded his ship General Brown stated, "I had three very happy years in Panama and I hate to say goodbye. But that is life—we must go where we are sent."

Never has there been seen on the Isthmus a ceremony more imposing than was held on Pier 6, which was given over to the composite escort of honor which in-

cluded companies from the three regiments stationed on the Atlantic Side, with their massed national and regimental colors and battle streamers. Two bands rendered the last ruffles and flourishes and formal salute due his rank, to the departing commander.

Recognition of ability is one of the few "payments" we receive in the Army. One of the outstanding officers of the Army has received this recognition and has been appointed a major general to succeed General Brown. Major General Harold B. Fiske, formerly Commanding General of the Atlantic Sector, has been appointed the new Department Commander. The Coast Artillery of the Panama Canal Department congratulate General Fiske upon his appointment to command one of the most important defenses of the Nation.

A review for General Fiske was recently held at Fort Clayton, comprising all of the troops, with the assembled animal and motor transportation, of the Pacific Side. Brigadier General Thomas W. Darrah was in command of troops. Every available officer and man was present in ranks; and let me say that down here "every available officer and man" means practically *every* officer and man.

After the review all officers were assembled, and among the remarks of the Department Commander were some very complimentary ones pertaining to the noticeable superiority of precision in movements and in the manual, as executed by the Fourth Coast Artillery. To further bear out this contention, a Department Board was recently appointed to make recommendations concerning the new tentative Infantry Drill Regulations. The Board chose the Fourth Coast Artillery to perform the demonstrations. There has always been a school of thought in military training that a short snappy drill, with particular attention paid to precision and detail, is much better than many long periods of drill. The results obtained at Fort Amador, with only two short infantry drills a week, seem to bear out that contention.

Gunnery Schools

In order to fill the gap created by the prospective lack of funds for target practice, two schools of instruction were inaugurated at Fort Amador for all officers of less than ten years' service. The first school covered seacoast gunnery, with particular attention paid to the practical knowledge concerning the operations of instruments in the plotting room and to the care and adjustment of the armament on hand. The second school is covering practical and theoretical anti-aircraft gunnery. Both of these courses are concluded with a thorough examination.

Sports

Let's forget work for a bit and peer at play from the sidelines. Baseball is the present subject of conversation and Fort Amador is doing its share.

At present the intra-battery league is in full session, but it is a little early in the game to place the money. The teams are more evenly matched than in previous years, and as a consequence the games are closer, so that the fans and players alike are getting greater thrills.

News and Comment

Patronizing Home Industry

FOR many years the public has been urged to patronize home industry and to keep good American money within the confines of our own country. The subject is not new and the theory underlying it does not need to be expounded. The advantages which accrue from a pursuance of this policy are too well known to admit of a repetition.

Notwithstanding these facts it has been brought forcibly to the attention of the Editor of the JOURNAL that these preachings and importunings apparently have fallen upon deaf ears, and we are forced to conclude that the members of the Corps are not to the fullest extent possible lending their support by patronizing home industry, viz, the COAST ARTILLERY JOURNAL.

The reason for this is difficult to understand especially so in view of the fact that in certain cases the JOURNAL is in a position to render a service to the members of the Corps with the minimum of trouble and annoyance to the individual and *without increasing the expense*. Frequently we are able to save money for our patrons.

All of this has to do with the question of placing with the JOURNAL orders for visiting cards, engraving, books, and subscriptions to magazines. We specialize in these departments and we confidently believe that your patronage will save you money. In any event it will not cost you any more than similar service will cost you through some other agency.

So far as subscriptions to magazines and periodicals are concerned we guarantee to meet the price quoted by any reputable magazine agency or broker. The JOURNAL has been engaged in this activity for many years, so long in fact, that it seems incredible that there are today members of the Coast Artillery Corps who do not know that the JOURNAL conducts a magazine subscription agency, but many replies have convinced us that this is the case. One officer in particular, a captain of long service, in writing to the JOURNAL stated "I did not know the JOURNAL was in the magazine business, otherwise, I would have given you my order." We are convinced that many others are not fully informed concerning the side lines carried as business adjuncts of the JOURNAL. Further than this we are strongly of the opinion that the great majority of officers do not realize that the JOURNAL cannot be financed from the returns on subscriptions.

If it were not for the revenue derived from sources other than subscriptions we would have to go out of business. This has always been true but it has additional force and application at the present time because of the financial stringency and the loss of revenue formerly derived from paid advertisements. A check of the records shows that less than one-third of the organizations of the regular army place their subscrip-

tions for magazines and periodicals with the JOURNAL. This means that battery commanders are diverting a revenue from our coffers into money tills, the owners of which have no interest whatsoever in the Coast Artillery Corps or in the service in general, except to extract shekels. We could understand and appreciate the reason for this if the custodians of the battery funds were thereby effecting a saving; but this is not the case, therefore we assume that it is a result of carelessness, thoughtlessness, or lack of instruction on this subject.

It is fully realized that the pages of the JOURNAL are not the proper place to advertise our wares, drum up trade, or upbraid those who fail to lend their support. Nevertheless, we believe that the question is of sufficient importance to make an exception in order to bring it to the attention of all concerned.

In closing we wish to emphasize that here is an opportunity to render a service to the Coast Artillery Corps without any additional financial outlay on the part of individuals or organizations.

Captain Fred B. Waters, C.A.C., Commands Outstanding Camp

TO Captain Fred B. Waters, C.A.C. goes the signal honor and distinction of commanding the C.C.C. company which has been declared the winner of the gold medal awarded by the *Army and Navy Journal* to the outstanding Civilian Conservation Corps Camp in the Third Corps Area. Captain Waters is in command of the 1391st Company, Camp S-52, located near Salem, Va. The entire personnel of this camp are native Virginians, the majority of whom were selected from the rural districts.

The selection of the winning company was made by the Headquarters of the Third Corps Area and is the result of inspections made by officers of the Inspector General's Department and official reports on the general condition of the camp so far as morale, sanitation, work accomplished, and many other factors are concerned. Prior to assignment to this duty Captain Waters was on duty with the 2nd Coast Artillery, Fort Monroe, Va. Commenting upon the winning of the first prize within the Third Corps Area, Captain Waters had the following to say:

"From the initial formation of the company, unity of command has been the prominent consideration in its organization. Every man in the company has learned to feel keenly the importance of the job he does. Each is given ample opportunity to demonstrate the constructive things he thinks he is best qualified to do. A versatile educational program is attracting many of the boys and enabling them to look at life with a broader point of view."

The extent of the work accomplished in the forest

to date (Sept. 15, 1933) is the construction of twelve miles of fire breaks, nine miles of complete truck trails, construction of one tool house and one office building, and seven acres of completed landscaping. In addition to this, much time has been devoted to fighting forest fires and to fire prevention. The visualization of ideas both individual and collectively, cognizance of group psychology by the leaders and the desire of the men for self improvement, account for the prevailing state of morale and the distinction this camp holds.

The forestry superintendent has stated that the work accomplished by the men in the forests was of high quality and cited the number of miles of roads and fire lines constructed and the number of acres on which sylvan culture has been completed. A part of this work appears in the road leading to the camp and clearing of the forest in the vicinity.

In winning this trophy Captain Waters has manifested to a marked degree the qualities of leadership, initiative, organization and appreciation of the duties and responsibility which devolve upon a camp commander under trying and oftentimes unfavorable conditions. The Coast Artillery Association desires to extend to Captain Waters and the officers and men of his command, the congratulations of the Corps. His outstanding performance should be a matter of considerable pride to all concerned.

Seattle Chapter Meeting Coast Artillery Association

IT'S business before pleasure with the Seattle Chapter of the Coast Artillery Association, but a generous share of both characterized its first fall meeting held on October 7th. As Col. Walter S. Pollitz, CA-Res., president, in commenting upon the accomplishment of the day, aptly remarked, "It has taken us 12 years to discover what real talent and capabilities lie among us. Let's see to it now that this latent ability finds continued expression."

The accomplishment of the day was the Seattle Chapter's first field problem, conducted by two provisional regiments; the one comprising officers from the 509th (AA) and 979th (AA) Coast Artillery, commanded by Col. Walter S. Pollitz, the other embracing officers of the 630th (HD) Coast Artillery, Col. Willis C. Bickford commanding.

Due largely to the efforts of the committee headed by Capt. F. H. Conrad, some sixty officers from Seattle and vicinity met at 3:00 P. M. at Richmond Highlands north of Seattle to solve the reconnaissance problem. The antiaircraft regiment had for its mission the selection of positions for the protection of oil tanks at Points Wells and Edwards and a hypothetical airdrome near the Pacific Highway in the same general locality.

The harbor defense regiment proceeded three miles north to a previously selected regimental command post. Here dictated orders were issued detailing to the regiment the duty of selecting 155 mm. gun positions for the purpose of denying to the enemy the use of Ad-

miralty Inlet and Possession Sound for destroyers and mine sweepers. Additional requirements lay in recommendations for the location of regimental, battalion and battery elements, which were followed by the visits of the regimental commanders.

Dusk found the crowd sojourning to a cafe in Edmonds near by for dinner and the critique. The latter was conducted by Major W. K. Richards, CAC, Seattle Executive for Organized Reserves, and the regimental commanders, Col. Pollitz, being assisted by Major L. E. Tebb, and Major L. B. Robinson, with Major R. S. Hawley, Capt. C. D. Hill and 1st Lt. R. L. Stith aiding Col. Bickford. The results were highly satisfactory and explicit. Required locations and communication nets were appropriately marked on a large contour map of the entire area prepared by Lt. C. H. Hutchison. The locations selected and the findings of the day were discussed by the staff officers. Of even greater value was Major Richards' criticism and constructive comments, which closed the critique.

Col. Edward Kimmel, CAC, P. M. S. & T. University of Washington R. O. T. C., addressing the group on "Field Service with Troops," provided further thought to the occasion as well as inspiration and enthusiasm.

Not that the latter element was lacking in any degree. Rather did the spirit of the dinner and the assembled host abound in good sportsmanship. Once more the Fusiliers—the veritable funny-bone of this body—held sway under the direction of Capt. R. D. Herriek, seeking to complete the initiation of 1st Lt. Alexander Young, and seeking further to acquire a "mascot."

In short, it was a full program for both afternoon and evening—highly efficient and highly enjoyable.

What a day—and what a night!

A Book You Cannot Afford to Be Without

ELSEWHERE in the JOURNAL will be found an advertisement describing in detail a new book which recently has been produced for the JOURNAL under the caption *Coast Artillery*. Coast Artillery officers and organizations needing a complete and up-to-date text on all Coast Artillery subjects except submarine mining, will find this book more suitable to their needs than any other treatise on Coast Artillery subjects on the market. It is largely a compilation and consolidation of all instructional matter which has heretofore been published in many different books and pamphlets. It deals solely with Coast Artillery matériel, fire control equipment and similar appliances. Subjects pertaining to basic and general training have been omitted. The text has been thoroughly revised and brought up to date. All necessary new matter has been added. It is the most thorough and complete manual on Coast Artillery training and matériel that ever has been produced. It contains 900 pages and more than 500 illustrations. It will be of great value to junior officers and to organization commanders for the reason that it encompasses in one volume the essential parts of

all instructional matters which heretofore have been scattered through numerous books, field manuals and training regulations. The endorsements which have reached this office indicate that it is filling a long felt want and is well suited to the instructions and training of all components of the Coast Artillery Corps.

Coast Artillery Song Contest

THE date originally prescribed for the closing of entries in the contest sponsored by the United States Coast Artillery Association, to obtain a suitable Coast Artillery song, was fixed as of October 15, 1933. On that date 15 had submitted compositions. Some of the entries were lyrics only, others consisted of both lyrics and musical score, while one entry consisted of the music only.

The President of the Association appointed a committee of five members of the Association residing in Washington to act as judges of the contest. We do not consider it desirable at the present time to divulge the name of the members of the committee but we will say that one is a nationally known musician, one is a member of the National Guard, another holds a commission in the Organized Reserves, and two are in the Regular Army. These officers have been selected because of their interest in the subject and their knowledge of music. Their job is not an easy one. Many of the entries appear to be excellent but there is no way of predicting in advance whether or not a song, no matter how meritorious or how inspiring, will catch the popular fancy. It is impossible to out-guess the public especially when the popularity of a musical composition is at stake. It is likely that it will be several months before the judges have reached a verdict and we are prepared to announce the winner. Although October 15 was arbitrarily selected as the closing date for entries, if any one desires to enter the race it is not yet too late to submit your composition. What we want is an inspiring marching song which will, for years to come, cause the pulse of all Coast Artillerymen to quicken and marching columns to pick up tired feet with renewed vigor whenever they hear its exhilarating and inspiring refrain.

Batteries Rated Excellent Fiscal Year 1933

UNDER the provisions of paragraph 3, TR 435-55, the War Department has completed the reports of target practices fired during the fiscal year 1933 by organizations of the Regular Army. Based on this report the personnel of the following organizations are entitled to wear the red "E" on the right sleeve. A certain number of batteries that had demonstrated their efficiency in previous target practices were authorized to fire an advanced target practice. The conditions governing such practices differed from the methods prescribed in regulations; in these cases the final score is not shown. The performance of all batteries authorized to fire advanced practices were not sufficiently out-

standing to warrant an excellent rating. In all cases where a score is shown the practice was conducted in accordance with prescribed methods.

Corps Area or Department	Regiment	Battery	Caliber	Score
I	Provisional	Mine Battery, I Corps Area		91.5
II	62d	B	3" A.A.	84.19
	62d	C	3" A.A.	60.18
	Provisional	Mine Battery, H.D. of Sandy Hook		98.0
III	51st	A	155 mm.	98.9
	51st	B	155 mm.	129.0
IV	69th	A	S.L.	100.6
	69th	E	M.G.	145.96
VI	61st	A	S.L.	113.1
	61st	B	3" A.A.	81.75
IX	6th	K	12" B.O.	180.1
	68d	A	S. L.	118.0
	68d	B	3" A.A.	63.32
	Provisional	Mine Battery, IX Corps Area		100.0
Panama	1st	A	3" A.A.	117.48
	1st	B	3" A.A.	70.38
	1st	C	14" D.O.	93.4
	1st	E	3" A.A.	134.60
	1st	G	3" A.A.	77.24
	1st	H	14" D.C.	87.5
	4th	B	3" A.A.	102.93
	4th	C	S.L.	112.3
	4th	D	6" D.C.	94.3
	4th	G	14" Ry.	125.4
	4th	F	3" A.A.	75.97
Hawaii	15th	B	12" D.C.	182.1
	15th	D	155 mm.	100.6
	55th	A	155 mm.	106.6
	55th	B	155 mm.	98.6
	55th	E	155 mm.	115.2
	55th	F	155 mm.	104.3
	64th	A	S.L.	122.3
	64th	E	S.L.	117.6
	64th	F	3" A.A.	59.73
	64th	I	M.G.	76.51
Philippines	59th	B	14"	Advanced
	59th	C	6" and 3"	125.4
	59th	D	6"	98.9
	59th	F	12"	Advanced
	60th	A	S.L.	124.9
	60th	D	3" A.A.	63.11
	60th	E	M.G.	79.14
	91st	A	Mines	98.5
	91st	B	6" and 3"	124.2 *
	91st	C	12" M.	Advanced
	91st	G	6"	Advanced
	92d	A	3" S.C.	130.6

* 124.2 is average score of 3" practices; practice fired with 6" Guns was an advanced practice.

Allotment of Officers to the Coast Artillery Board Increased

DUE to the reduction in the number of officers assigned to duty in the office of the Chief of Coast Artillery it has been necessary to require the Coast Artillery Board to check target practice reports, prepare training regulations, Coast Artillery Memoranda and much other work which was formerly performed in the Chief's Office. For several years past much assistance has been given to the Coast Artillery Board by the instructors at the School. This year the number of the latter has been reduced to a minimum and the Board is unable to secure assistance from this source.

The present quota (five officers) was prescribed by the War Department in 1932. Since that time the work of the Board has increased to such an extent that there are now many important projects under consideration and insufficient personnel to handle the volume of work. For these reasons the Chief of Coast Artillery has requested that the strength of the Board be increased to seven officers effective at once. At the time of going to press no selection has been made to fill these vacancies.

COAST ARTILLERY BOARD NOTES

Any individual, whether or not he is a member of the service, is invited to submit constructive suggestions relating to problems under study by the Coast Artillery Board, or to present any new problems that properly may be considered by the Board. Communications should be addressed to the President, Coast Artillery Board, Fort Monroe, Virginia.

THE COAST ARTILLERY BOARD

COLONEL A. H. SUNDERLAND, C.A.C., *President*
MAJOR IRA A. CRUMP, O.D.
MAJOR J. D. MCCAIN, C.A.C.
MAJOR A. F. ENGLEHART, C.A.C.

CAPTAIN H. C. MABBOTT, C.A.C.
CAPTAIN J. T. LEWIS, C.A.C.
CAPTAIN S. L. MCCROSKEY, C.A.C.
1ST LT. WALTER J. WOLFE, C.A.C.

Projects Completed Since the Last Issue of the Journal

SECTION I

Project No. 956—Test of Compass, Lensatic, With Leather Case.—This device is a simple modification of the standard prismatic compass used with sketching equipment. The essential changes made were:

a. A lens was substituted for the prism. The lens is used to read the scale on the far side of the compass card.

b. A mil scale is provided in addition to the usual degree scale on the compass card.

In the opinion of the Coast Artillery Board the lensatic compass is preferable to the prismatic compass, but since a compass is not used extensively by Coast Artillery personnel either type would be acceptable.

The Coast Artillery Board accordingly recommended that (a) the Lensatic Compass be adopted to replace the prismatic compass if the costs of the two types are comparable; and (b) if the cost for one type is markedly less than for the other, the procurement service be authorized to supply the less expensive type.

Project No. 963—Test of Stereoscopic Range Finder T-2.—This project is the third of three related projects on self-contained range finders for use with seacoast artillery. Project No. 609 was a comparative test of a coincidence type and a stereoscopic type of range finder. As a result of this test, the Coast Artillery Board concluded that the stereoscopic type of range finder was distinctly superior to the coincidence type. Project No. 946 was a comparative test of a 4-meter base instrument with a 6-meter base instrument, both being of the stereoscopic type. As would be expected, the 6-meter base was more accurate than the 4-meter base. This was particularly true at ranges in excess of 10,000 yards.

During the tests, the two instruments were operated side by side. A horizontal base system of plotting was used as a standard of comparison. Three horizontal base stations were used in order to reduce to a minimum, errors in the horizontal base system.

During the tests, thirty-seven day courses and eight

night courses were run on shipping of all types, from sail boats and small motor boats to large commercial steamers. The conditions of visibility were such that on only two occasions was it possible to track a surface vessel at ranges up to 15,000 yards. In order to obtain some indication of the value of the instrument at ranges beyond 15,000 yards, an army airship from Langley Field was used. This ship could be seen up to maximum tracking ranges.

As a result of all of its tests with self-contained range finders, the Coast Artillery Board recommended that (a) the Stereoscopic Range Finder T-2 be adopted as the standard range finder for fixed and mobile rapid fire batteries located on small islands or in positions where access to an outlying station is extremely difficult; (b) the stereoscopic Range Finder T-2 be considered as a satisfactory emergency range finder for fixed and mobile rapid fire batteries; and (c) the Stereoscopic Range Finder T-2 be considered as a suitable emergency range finder for fixed major caliber batteries, where outlying stations are subject to enemy interference and where heights of site are so low as to prevent the use of a depression position finder.

Project No. 977—Fire Control Communication Switchboard, Type BD-74.—The Fire Control Switchboard BD-74 is a development of the so-called "Panama Type" fire control switchboard and is an improvement over a previous Signal Corps switchboard reported upon in Coast Artillery Board Project No. 843. The original "Panama System" was adapted to the standard equipment by terminating all lines in jack panels, thus providing for rapid interchange of lines through the use of jacks and plugs. In the Panama development the jack panels were assembled locally. A further development of the Panama System was made at Fort Monroe, Virginia, under the supervision of Captain Creighton Kerr, Coast Artillery Corps, Artillery Engineer for the Harbor Defenses of Chesapeake Bay. In this latter development the switchboard was further improved by separately energizing each telephone, all talking circuits being separated by condensers.

The new board incorporates the best features of the

several systems which preceded it; i. e., it has the flexibility of the Panama System; each telephone is separately energized, and testing circuits are provided to facilitate rapid test of the line or switchboard components. Special repeating coils are used in place of choke coils and condensers, to facilitate ringing. The special coils are designed to give maximum efficiency for the particular conditions of installation. The equipment, other than the coils, is standard commercial apparatus which may be easily obtained in quantity. The construction of the board contemplates the normal situation of connecting certain circuits together as in the old type system, emergency changes being made by means of jumpers. The switchboard tested was made up in a completely wired unit of 96 lines. It is expected that the necessary number of unit switchboards will be supplied to take care of the telephone circuits required for particular situations.

The Coast Artillery Board recommended that the switchboard BD-74 be standardized and that it replace the present type switchboard for such projects as may be approved by the War Department.

Project No. 979—Test of Solothurn 20 mm. Antiaircraft Gun.—The Solothurn gun was procured from a European manufacturer for test as to its suitability as an antiaircraft weapon of intermediate caliber.

This gun is a full automatic, air-cooled gun of 20 mm. caliber. It fires several types of projectiles, among which are solid shot, simple tracer and high explosive shells, the latter with and without tracers. The high explosive shells are equipped with supersensitive fuzes and contain self-destroying elements. The gun is mounted on a carriage with detachable wheels. The mount is very stable during firing. It is easy to emplace and to assemble for travelling. The mechanical means provided for tracking a target, however, are not well suited for firing at aircraft.

An antiaircraft computing sight is provided. While this sight is an ingenious device and may point the way to a good solution for a computing sight, as now designed, it cannot be operated rapidly or easily enough for firing at high speed aircraft.

The tracers were very good, being clearly visible under all conditions existing during the test firing. The high explosive shells will detonate almost instantly upon contact with airplane wing fabric.

The Coast Artillery Board recommended that further action in the matter be held in abeyance, pending tests of an improved caliber .50 machine gun and mount which is reported to be in the final stages of construction and also pending further investigation of weapons of larger caliber.

Projects Under Consideration

SECTION II

The following projects were discussed more or less in detail in the September-October issue of the *COAST ARTILLERY JOURNAL*. No remarks concerning these projects are included here unless some additional points of general interest have developed since the publication of the last issue of the *JOURNAL*.

Project No. 608—Duco Surfacing for Guns.—No comments.

Project No. 929—Experimental Field Chronograph (Jackson).—Preliminary tests of this device have been conducted at Aberdeen Proving Ground, during which tests six rounds were fired from a 75 mm. gun. Velocities were measured by the Jackson Chronograph and also by the le Boulange chronograph. The results obtained by the two instruments agreed very closely, the greatest discrepancy being 5 f/s.

It is expected that additional tests will be conducted at Aberdeen Proving Ground before the Chronograph is sent to Fort Monroe for field test by the Coast Artillery Board.

Project No. 937—Test of Submarine Mine Equipment.—This project now involves only the Harrison Circuit Closer.

Project No. 947—Test of Oil Clothing for Use by Army Mine Planter Personnel.—No report on the suitability of the clothing under test has as yet been received from the Commanding Officer of the cable Ship *Joseph Henry*.

Project No. 953—Radio Controlled High Speed Target.—Some progress has been made on this project since the last report. A commercial firm, located in Detroit, Michigan, has completed a model high speed target. It is thought that this model does not incorporate actual radio control features but it is hoped that such features may be added if found desirable. A member of the Coast Artillery Board has been sent to examine this model to determine its suitability for Coast Artillery use. The exact specifications of the model are not now available. It is reported, however, that it will make speeds of between 30 and 35 miles per hour and that it carries a twenty-five-foot mast flying a flag ten feet square. It is hoped that this model will point the way toward securing at a reasonable cost, a target upon which we may fire when it is on any desired course and travelling at any reasonable speed.

Project No. 958—Device for Checking Mobile Artillery Sight Mountings.—No comments.

Project No. 961—Improvised Mounting, Telescopic Sight, 155 mm. Guns.—The device for mounting the M1898 Telescope proposed by Colonel James B. Taylor, Coast Artillery Corps, and actually used in the Philippine Department, was designed to meet target practice situations where deflections are known approximately before firing. The Coast Artillery Board is constructing a model, modified to meet more nearly, actual service conditions. It is hoped that such a device can be constructed cheaply and that it will serve as a stop-gap for Case II firing until a universal sight, satisfactory for both Case II and Case III fire, can be developed and supplied for 155 mm. guns.

Project No. 964—Test of Rubber Jacketed Submarine Mine Cable.—A sufficient quantity of the new type rubber jacketed submarine mine cable has been received to permit its use in connection with the Comparative Test of Submarine Mine Systems (Project No. 971) now under way at Fort Monroe. This cable

appears to be much superior to the present standard jute covered armored cable.

Project No. 966—Test of Circuit Closer Model 1933.—No comments.

Project No. 968—Preparation of Coast Artillery Memorandum No. 14.—Due to the fact that no regular Army target practices are scheduled for the fiscal year 1934, the early publication of Coast Artillery Memorandum No. 14 is not considered essential. Due to the pressure of other work, the time for completion of this project has been extended to about February 1, 1934.

Project No. 970—Test of Firing Lock Mark I.—Actual tests of this mechanism have been completed. The device as now constructed is not entirely satisfactory. Its safety features are considered inadequate for certain types of guns and, in addition, it cannot be adapted to all calibers to which it should be applied. Report on this project has not been completed due to the fact that the whole subject of firing seacoast cannon is involved and there has not been available sufficient time for a thorough study of all related factors.

Project No. 971—Comparative Test of Submarine Mine Systems.—This test is now under way at Fort Monroe. No definite results are ready for publication.

Project No. 973—Test of Lacquers and Varnishes for use as Rust Preventatives.—Most of the materials for this test are on hand. It is possible, however, that conditions may delay the application of these materials to armament until spring.

New Projects

The following new projects have been initiated since the publication of the last issue of the JOURNAL:

Project No. 975—Preparation of Text on Tracer Control.—Heretofore nothing has been published officially on the subject of training gunners in tracer control of machine gun fire. While it is admitted that no completely satisfactory system of machine gun fire control has been developed, even with tracers, it is hoped that the publication of certain established methods of procedure in tracer control will be of assistance to battery commanders.

Project No. 978—Time Interval Apparatus.—This device is a further development of the Wallace and Tiernon time interval apparatus tested and reported upon by the Coast Artillery Board in Project No. 922. The model now under test incorporates the changes recommended in Project No. 922 and permits a wide choice of observing and plotting intervals. While originally designed for use with mobile artillery, it appears probable that it may be used as well for fixed armament.

Project No. 979—Simplified System for a Seacoast Director (Meadows).—First Lieutenant John J. Meadows, CA-Res., has submitted a mathematical study and a schematic design for a simplified seacoast computer. Lieutenant Meadows has made a nice mathematical analysis of the problem and has displayed considerable ingenuity in working out his proposed solution. The advent of the Lewis-Trichel director, however, for the present at least, makes un-

desirable further development of Lieutenant Meadows' proposals. In the event that it later becomes desirable to attempt further development of a director using sliding linkages for the mechanical solution of triangles, Lieutenant Meadows' suggestions will receive consideration.

Miscellaneous

SECTION III

The following subjects, not handled as projects but upon which the Coast Artillery Board has acted since the last publication of the JOURNAL, have been selected from the files of the Coast Artillery Board because of their general interest:

Teletype Apparatus.—The use of Teletype apparatus for the transmission of intelligence, orders and data for Coast Artillery units was proposed to the Coast Artillery Board by a representative of the Teletype Corporation. Two types of apparatus were proposed; viz., the page printer for transmission of intelligence and orders and the tape printer proposed for transmission of data. Consider first the page printer. While it would be highly desirable to have printed messages in certain instances in place of telephonic instructions, and while such printed message would perhaps reduce the probability of error, it was not thought that the use of such a device in a tactical unit as low as a brigade or harbor defense would be necessary. It is understood, however, that such a unit is being considered for use in higher commands.

In considering the tape printer for transmission of data from plotting room to guns or from base end stations to plotting room, the usefulness of the Teletype should be compared with that of the self-synchronous data transmission system now standardized for antiaircraft artillery use and also under consideration for seacoast use. Had the Teletype system been obtainable in inexpensive units a few years ago, when all gun data was transmitted intermittently, it is probable that it might have been adopted. The development of the director, however, has made it possible to obtain continuous data at the guns, a thing not possible with the Teletype. Furthermore, the self-synchronous system permits matching under conditions of poor visibility by means of luminous pointers. For the reasons given above, it is the opinion of the Coast Artillery Board that there is no need for Teletype apparatus in Coast Artillery units at the present time.

Ammunition Chest for Caliber .50 Machine Guns.—First Lieutenant Urban Niblo, Ordnance Department, arrived at Fort Monroe on September 22, 1933, bringing with him for test by the Coast Artillery Board a new type ammunition chest for use with the caliber .50 machine gun. The chest is designated as the Ammunition Chest M-2 and is in fact the same type of chest as that used by the Navy. It is an aluminum box incorporating a reel in the top and an open space at the bottom. Belts of ammunition are first wound around the reel until that is full and then the remaining length of belt is folded back and forth on itself in the space in the lower part of the box. In operation,

the ammunition in the lower part of the box feeds out first; that on the reel then follows. The chief advantages of this type of box are that it disturbs the balance of the gun less than the old type and that the ammunition does not have to be lifted so far by the gun as the belt feeds into the gun.

The Coast Artillery Board recommended that the M-2 Ammunition Chest be approved as to type, but favored increasing the capacity of each chest from 200 rounds to 300 rounds. Certain other minor modifications were recommended to facilitate operation, handling, and storing.

T-8-E-3 Antiaircraft Director.—The Sperry Gyroscope Company has recently completed a new antiaircraft director designated as the T-8-E-3. This director is essentially the same as the previous T-8 Sperry directors, but it incorporates several minor modifications made in the interests of over-all accuracy and smoothness of operation. Accompanying the new director is a separate device known as the Tracker T-1. The purpose of this new device is to permit offset tracking; i.e., the Tracker is used to follow the target and the director is placed in a concealed position or even in a dugout. The data from the tracker is electrically transmitted to the director. Such procedure is intended to reduce the vulnerability of the entire fire control system.

The T-8-E-3 Director and the Tracker T-1 are scheduled to arrive at Fort Monroe about the last of October. It is contemplated that the Coast Artillery School will use the instruments in their firings scheduled for November 1 to 11. Such firings will afford at least a partial field test.

Dial Counters.—The Coast Artillery Board has recently constructed a combination dial and counter mechanism which will permit using modified commercial counters to indicate azimuths in mils. The design was suggested by the design section of Frankford Arsenal in an attempt to make unnecessary the use of the new angular measurement discussed in the September-October issue of the JOURNAL (Par. 5, Section III, C. A. Board Notes). The model operated well and present plans contemplate that the scheme will be incorporated in the Seacoast Director T-5, thereby permitting the use of mils for azimuth instead of the new unit originally planned.

Data Transmission System T-11.—The data transmission T-11 is a self-synchronous system for transmitting intermittent data from the plotting room to the guns in batteries not equipped with directors. It is proposed to install such a system in a limited number of seacoast batteries, particularly those in which telephone transmission of data is unreliable due to the noise of elevating and traversing gearing. The system is designed for two gun positions and permits the application of parallax and calibration corrections in the plotting room so that the elevation and azimuth of the gun may be obtained by matching pointers only.

It is expected that if and when directors become available for those batteries equipped with the T-11 system, the receivers and gearing on the gun may be used with little, if any, modification. It is further expected that the transmitters of the plotting room mechanism may either be transferred directly to a director or used to equip other batteries.

The transmission system T-11 is still in the design stage at Frankford Arsenal. It is hoped, however, that a pilot model will be available for test within the present fiscal year.

Water-Proofed Fire Control Communication Cord.—Coast Artillery Board Project No. 895 concerned the test of a rubber-jacketed tinsel cord intended for use with fire control telephones. Subsequent to the submission of the report on the original test by the Coast Artillery Board, the cords were placed in service for one year and further examination made. The later tests showed that the cords had withstood one year's service satisfactorily. It was the opinion of the Coast Artillery Board, however, that lamp cord construction would be more rugged and reliable than tinsel type. It was therefore recommended that lamp cord be used, provided such procedure was compatible with other requirements. Fortunately, it appears that such a cord is a commercial product used for flexible lamp cables in mining operations. Instead of the usual twisted pair construction, however, this improved cord is made by winding two or three strands, as required, in a spiral around a center cotton core. Such construction allows greater flexibility than is possible in twisted pair and, further, permits a smooth outside wall of uniform thickness. It is hoped that the new cord will greatly reduce telephone troubles due to cords.



NO MAN HAS EVER LEFT HIS FOOTPRINTS *on the sands of time by resting his anatomy in a comfortable chair.*—THE COLUMBIAN.

RESERVE NOTES

Policies Affecting the Officers' Reserve Corps

THE following brief summary of policies affecting the Organized Reserves are considered of sufficient interest and importance to warrant their repetition:

1. The commander of each Reserve unit is responsible for the organization and training of his unit, including the preparation of training programs and schedules, and the execution thereof, the maintenance of the unit mobilization plan, and the procurement and development of the necessary commissioned personnel.

2. The bulk of the active duty training is to be done in the months of July, August and September. Normally the tour of duty will begin and end on a Saturday.

3. At least 80 per cent of the field training is to be given to officers of combat arms. Field officers will not exceed 10 per cent of the total number of trainees. Every effort is made to train a maximum number of lieutenants, especially the recent graduates of the R.O.T.C.

4. Provided they have shown sufficient interest in their inactive duty work to indicate that active duty training would be of benefit to them, preference for active duty training is to be given to R.O.T.C. graduates who never have been to camp; and to Reserve officers who will be required in the first period of general mobilization. Only in exceptional circumstances will Reserve officers who have failed to show interest be ordered to active duty.

5. Extension course work is, as a rule, required of officers and units before they may go to camp in order to avoid to a large degree the teaching of rudiments and theory at a time when the work should be practical.

6. As a rule, it is the policy to train each Reserve officer every third year, provided funds are available and inactive training work is satisfactory. In selecting the specific units to be ordered to active duty, due consideration will be given to the relative state of preparedness of the several units to function under mobilization plans and to the relative importance of their mobilization missions.

7. The facilities of the National Guard are to be used for the field training of Reserves as far as it can be done without interfering with the self-training of the National Guard.

8. There is no legal bar to placing Federal civilian employees holding commissions in the O.R.C. on active duty solely because of their being Federal civilian employees. Reserve officers, including Federal civilian employees, who are performing the same class of work in civil life as the duty they may be called upon

to perform under their war assignment will, as a matter of War Department policy, be given a low priority for active duty training.

9. Every encouragement will be given suitable candidates to qualify for commissions in the Officers Reserve Corps, but prior to enrolling them, unit instructors should ascertain that they have, or will be capable of acquiring, the necessary ability qualifications. This includes practical ability to command a platoon at drill and ceremonies, with especial emphasis as to leadership and instructional ability and, for Coast Artillery, equivalent artillery duties. For prior enlisted service to be accepted as the equivalent, without further demonstration, the candidate must have served as a sergeant or higher and performed duties that would have required him to demonstrate ability in leadership, instruction and handling of enlisted men. Where exemptions are not granted, examining boards are required to devise such practical tests as will permit the candidate to demonstrate the necessary ability qualifications.

10. An examination and actual demonstration of capacity is still required to qualify for promotion.

11. Any Reserve officer, at the expiration of his five-year period of appointment, may be reappointed in his present grade, provided he passes a satisfactory physical examination, and during his current appointment he has established his eligibility by obtaining a certificate of capacity for his present or next higher grade, or by demonstrating his interest in military affairs by having during his present appointment period a written record of at least 200 hours of credit for various forms of activity, or by satisfactorily completing the prescribed course of instruction at a service school.

12. Any Reserve officer who has been placed on the ineligible list may regain a position on the eligible list by meeting reasonable requirements.

13. Transfer of Reserve officers between units of the same arm or service will be made for cogent reasons only. Application for transfer for personal reasons should not be submitted prior to determination by the officer concerned of the willingness of both unit commanders involved for the transfer to be made.

14. An increased number of qualified Reserve officers are to be sent to service schools as soon as possible, so as to provide one graduate per battalion at the end of five years. Whenever possible, junior officers, preferably, should be detailed to service schools of the arms.

15. In the selection of Reserve officers to attend the Special Service School, Fort Monroe, Virginia.

especial consideration will be given to character, sobriety, physical condition, intelligence, zeal and industry; thorough practical knowledge of the use of logarithms and elementary, algebra, geometry, and trigonometry, and facility to use this knowledge rapidly and accurately; good practical knowledge of the duties of battery officers and of Coast Artillery matériel; completion of the 30-series for the Special Battery Officers' Course and completion of the 40-series for the Advanced Course.

16. Priority in making recommendations for the purpose of attending the Command and General Staff School, Fort Leavenworth, will be given, first, to Reserve officers of field grade who have creditably completed the Command and General Staff School Extension Course and, to captains who have creditably completed that course. Reserve officers recommended for this school should not have reached their 48th birthday on the date set for the beginning of the course. No Reserve officer will be detailed whose record and qualifications do not indicate that he is well suited for training for high command and General Staff work, and for eventual duty in such positions.

17. Reserve officers selected for detail to the Special Courses at the Army War College will be of field grade, or general officers, under 52 years of age, and of such character, standing and education that there is no doubt that their detail will be of benefit to the government. Whenever possible, selection will be made from those who have completed in a creditable manner the prescribed course for National Guard and Reserve officers at the Command and General Staff School, or from those who have had the equivalent command or staff experience.

18. Reserve officers are to be used in an advisory capacity at Corps Area Headquarters.

19. Reserve officers, if properly qualified, are assigned as assistant chiefs of staff of Reserve divisions, and as administrative and technical staff officers.

20. Reserve officers are to be used as instructors whenever they are qualified. Field officers ordered to active duty will be employed to the fullest extent in the conduct of training and tactical exercises.

21. Corps Area Commanders are authorized to use properly qualified Reserve officers in the marking of extension course lessons.

22. Responsibilities and opportunities for command are turned over more fully to Reserve officers, and Reserve units are being made self supporting from an instructional point of view, as soon as practicable.

The Four Army Plan

THE substitution by the War Department of the Four Army Organization for the Six Army plan brings increased responsibilities to the Reserve officer, in that it requires a greater number of such officers for immediate service in the event of mobilization.

Under the Six Army Plan, which was based on a greater number of Regular and National Guard officers than are now available, only a small percentage of Re-

serve officers were required for duty in the field until several months after M day. Now the organizations of the General Headquarters, the Army and the Corps troops essential for the balanced forces to be mobilized initially, are inactive units of the Regular Army instead of Organized Reserve units. This places those units in a category which permits their use in active service in an emergency on orders from the President.

In order that these units may be promptly available for extended field service, Reserve officers will be given opportunity to agree in advance to serve more than 15 days whenever necessary. Such consent will be requisite for assignment to Regular organizations.

The status of Reserve officers assigned to other units remains unchanged, but the active service of the great majority will be expedited in cases of war. No changes will be made in the status of officers allocated to the National Guard.

The majority of Regular officers will find themselves assigned for mobilization to duties appropriate to one or more grades higher than those held in peace, with the obligation to prepare themselves for this broader responsibility. Most of the Regular officers will be charged with training of Reserve officers in their war-time assignments.

New Army regulations have been made, or existing regulations changed, to meet the main objectives of the new plan. These objectives are:

1. Prompt assembly of effective forces under permanent commanders and staffs who themselves have prepared the plans for the execution of which they will be responsible.

2. The immediate initiation of every activity it is possible to anticipate as necessary, under officers who have prepared themselves for the work, and without the necessity for a mass of orders and instructions from the War Department at a crucial period.

3. Possible extension of the initial effort to include the mobilization for our maximum effort.

The new arrangement should stimulate satisfaction and interest in all work incident to preparedness, for it will remove the duties of the Reserve officer from a fog of doubt. The Four Army plan is based upon the ability of Reserve officers to fill their assignment on M day, and it is felt that these officers will welcome their new responsibility.

Training for More Reserve Officers

MAINLY through the unceasing efforts of the Reserve Officers' Association of the United States, the President authorized the withdrawal of an additional sum of \$1,000,000 from funds impounded for 14-days active duty training of Reserve officers. It is estimated that this additional sum permitted the training of 7,400 additional Reserve officers.

There are at present 86,024 Reserve officers commissioned in the various Arms and Services on the Active Duty Assignable List, all of whom have met the professional requirements of their grade as laid down by the War Department. The second session of the

72nd Congress appropriated funds sufficient to train not less than 20,000 Reserve officers during the Fiscal Year 1934. The amounts made available to the War Department by the Director of the Budget were, however, curtailed so as to permit the training of but 3,151 Reserve officers. At present there are 1,672 Reserve officers on active duty with the Civilian Conservation Corps, making a total of 4,823.

The authorization of additional funds to train 7,400 more Reserve officers will make it possible to provide active duty training for 12,223 Reserve officers this fiscal year.

The ultimate program of the Reserve Officers' Association is to train every combat Reserve officer at least once a year.

It is stated that enrollments for membership in the Reserve Officers' Association are now at an unusually low ebb. The efforts the high officials of this organization have put forth to obtain this gratifying increase in the number of Reserve officers to be trained this Fiscal Year should meet with the approbation of every Reserve officer, and his support in a material way.

Training in the 529th C.A. (AA) Regiment

By Colonel William H. Monroe, C.A.C.

EDITOR'S NOTE.—The 529th C.A. (AA) is the 1933 winner of the Coast Artillery Association trophy.

IN the fall of 1932, General Reeves, commanding the Ninth Coast Artillery District, directed that a regiment, to be known as the 529th C.A. (AA), be organized in Portland, Oregon, and vicinity. Initially, it was provided with a quota of field officers and recently appointed second lieutenants; but the regiment was deficient in captains and first lieutenants. Many of these young officers had no military background whatever; but they were graduates of the technical schools and colleges of Oregon.

The State of Oregon has no R.O.T.C. unit nor any C.M.T.C., where coast artillery instruction can be given; consequently, it is hard to find promising candidates for Coast Artillery Reserve commissions who have had any prior military training. Perforce, a search must be made for recent graduates of the available technical schools, whose present occupation and training especially fit them for service in the Coast Artillery Reserves. These candidates have, by training and education, become self-reliant students and they take up extension school work with enthusiasm and confidence. In camp they quickly acquire familiarity with the saber and the art of instruction and giving commands. Many of them have already qualified for promotion and are voluntarily forging ahead, with the full knowledge that their certificates run out at the end of five years; but by making their answer sheets up in such a way that they can be used for ready reference even without the questions, five years hence (barring revision) as a refresher course.

About seventy-five per cent of the officers attend the

bi-weekly conferences, but encouragement is lent to self-help and home study, very little time being devoted to routine class lectures or instruction. When the necessity arises for clearing up obscure points, time out is taken for that purpose. The conference is primarily intended for individual help and instruction; but it has been found best to keep several groups working on the same subcourse during conferences, simply to create a common interest. Dependence on conferences and in particular on lectures is of little value and the officer who depends on them alone usually makes no progress. Conferences are invariably attended by field officers and in this way a fine *esprit* is created in the regiment. Instruction if given, is carried on by qualified reserve officers,—seldom by the Unit Instructor.

In the training of field officers and in the preparation of captains for promotion to field grade, it is becoming increasingly obvious that a great deal of help must be extended to officers pursuing the 40-Series, particularly in tactics and technique. It is not enough to hand these officers a bunch of pamphlets and tell them to go to it; under the present conditions, Unit Instructors must take the bull by the horns and do a great amount of additional work. They must segregate from the "Discussion" contained in the blue-sheet solution enough information to orient the officer concerned in how to go about the exercise and yet not give away the solution. The blue-sheet solution is lifted bodily from the C. & G. S. school at Leavenworth and is not well suited to the requirements of the reserve officer, who of course lacks the benefit of conferences and other published matter leading up to the solution of problems. All this preparation should normally be printed in the lesson assignment sheet but until that is authorized and comes to pass Unit Instructors will have to issue with each of the more difficult lessons, a supplementary discussion sheet giving the student all the authorized help that a student at Leavenworth would normally receive. This additional labor for the Unit Instructor is no joke; but unless it is freely given, there will be lamentably few promotions from company to field grade.

The same necessity applies to the C. & G. S. subcourses and preparation for Leavenworth; nor can satisfactory work reach the Corps Area marking boards in this advanced work until Unit Instructors take that work in hand, so as to insure proper preparation of students engaged in C. & G. S. work, before they send in their solutions.

I feel that the present requirement of a military background for all candidates is a mistake; for while such training is highly desirable, it could be so easily acquired by devoting, say, part of each conference period to such practical training, and we should no longer be debarred (practically) from inviting well-qualified civilians to take up military training because they have not already had the elementary training of a soldier. Experience at camp repeatedly has shown that these mature men, educated and trained to think for themselves, surpass in every respect the average

R.O.T.C. or C.M.T.C. graduate or ex-officer, who too frequently is irked by the course of study prescribed by the War Department and looks about for some way of avoiding it, with the feeling that he already knows enough to be promoted.

While the present method of selecting the winner of the Coast Artillery Association trophy has worked out to the advantage of the 529th CA-(AA) Regiment, it is a moot question as to whether it would not be better to select that regiment containing the highest percentage of officers who have completed at least forty hours work during the year, as shown by his extension school record. Then, if some individuals have accomplished, say, eighty hours, it might be counted as two units of forty hours each.

Another moot question concerns the advisability of permitting officers to forge ahead and pursue a higher Series after having completed the one required for their immediate promotion. Personally, I would be in favor of having all such broaden their ability in their present grades by taking up field artillery and infantry subcourses, these to count exactly the same as coast artillery work but not to be taken up until after the prescribed coast artillery courses have been completed satisfactorily. Until this is authorized and made practicable I do not feel like discouraging any officer who is qualified from fitting himself for higher command, at least theoretically, by advanced study, particularly in these uncertain days when, if war should come, all those fitted for promotion probably will be jumped one or two grades.

Notes from the 621st C. A. (HD)

THE regiment began its troop schools for the active training season of 1933-34 on October 18th, 1933. Regimental Troop Schools will cover the following Subcourses this season: 20-3 (Supply and Mess Management), 20-5 (Property, Emergency Procurement, and Funds), 20-6 (Defense against Chemical Warfare), 20-8 (Signal Communication for all Arms and Services), 20-1 Part II (Fire Control and Position Finding for Seacoast Artillery), 30-4 (Combat Orders and Solution of Problems), 30-3 (Organization of the Infantry Division), 30-5 Part I (Applied Gunnery for Seacoast Artillery), 40-5 Part I and II (Tactics and Technique of the Separate Arms). On October 18th there was a total enrollment in troop schools of forty students. In addition to these a large number of officers have enrolled in various subcourses for home study.

Five officers of this regiment have been ordered to active duty for a period of six months with the Civilian Conservation Corps. 1st Lieutenant George H. Seitz, Jr., for duty in the 1st Corps Area, 2nd Lieut O. S. Bray, for duty in the 2nd Corps Area, and 2nd Lieutenants Martin Harwitz, Lloyd H. Lewis, and Harry W. Orth, for duty in the 9th Corps Area.

On October 19th the Reserve Officers' Association of the United States, Department of Delaware, held its

first meeting for the fiscal year 1933-34. Some twenty odd officers of the 621st Coast Artillery attended this meeting. Motion pictures of the activity of the 621st Coast Artillery while on active duty at Fort Hancock, N. J., in August were shown.

Unique Program of Training at Fort Winfield Scott

ON the theory that "diversity is the spice of life," the commanding officer worked out a unique training program for the instruction of the Coast Artillery field officers ordered to that post during the past summer. The program was made to correspond closely to the actual duties required of group and groupment commanders of a harbor defense, and as regimental staff officers in event of mobilization.

With the idea of making the training realistic it was assumed that a coalition of European powers had declared war against the United States, and that most of our fleet was in the Atlantic. Mobilization of the troops assigned to the San Francisco mobilization center had been ordered. Fourteen field officers reported on M day and were assigned to duty at the mobilization center and as regimental and battalion commanders. It was their task to take the necessary action to receive the incoming troops. Each was required to submit an estimate of what his unit would require to house, feed and equip it. Then, based on the training program of the mobilization center, each officer was called upon to prepare a brief training program and a first week's training schedule.

The second phase of the training was based on the assumption that changed conditions, due to a Pacific power entering the war against the United States, required preparation for immediate defense. Group and groupment stations were organized and manned (theoretically). Each officer was required to draw up plans for security and information, local defense, camouflage, etc. Finally, as a logical culmination of the training, the tactical situation required a report of actions taken and orders issued during a long range bombardment of the Bay Area; an attempted run by; and the repelling of a determined attack against the defense.

Reserve Funds

The Commanding General of the 9th Corps Area has been informed by the War Department that the allotment of Reserve funds for that Area in 1934 will be based upon 14 days' training for 225 Reserve officers of field grade and 142 officers of company grade, exclusive of Air Corps. Company officers will be from the Coast Artillery, Field Artillery, Infantry, Cavalry, Signal Corps and Engineers. The Commanding General of the 9th Coast Artillery District (OR) has been authorized to train 14 field officers and 14 company officers, this being the Coast Artillery's share of the funds available for 1934.

THE FOREIGN MILITARY PRESS

Reviewed by Major Alexander L. P. Johnson, Infantry

MEXICO—*Revista del Ejercito y de la Mariana*—June, 1933.

"Establishment of Schools of Application," Official Decree.

On June 8, 1933, the Mexican War Department issued an order announcing the establishment of a school of application, which in a general way apparently is to be modeled along the line of the special service schools of the United States Army. With the creation of such an institution, the Mexican Army will be provided with a well rounded system of military education and training. The plan also provides for special courses of instruction for non-commissioned officers. The course of instruction will be for one year. This new institution, like all military schools in Mexico, is under the direct control and supervision of the "Direccion General de Educacion Militar" (Directorate General of Military Education).

AUSTRIA—*Oesterreichische Wehrzeitung*—August 4, 1933.

"Fire Protection During Aerial Attacks," by Major Hugo Schörgi.

Modern bombers employing thermite incendiary bombs of about 50 kg. each may cause simultaneous conflagrations of a serious character in several parts of a city and thus overtax the capacity and resources of the best fire-fighting organization. The amount of damage an aerial bombardment may cause under favorable conditions is beyond the possibility of estimating. The author believes that this situation opens a fertile field for the "civilian antiaircraft defense." Aside from providing an adequate fire-fighting organization and apparatus, he considers certain structural reforms as indispensable. In order to prevent the rapid spread of conflagrations, the author believes the modern city should consist of detached structures set back from the street. This will also favor the rapid dissipation of toxic gases. He also advocates zoning of residential, business and industrial districts. The modern city should have an ample water supply.

The author points out that lumber used for structural purposes will ignite at a temperature of 400 degrees centigrade. Since the modern thermite bomb produces a heat of 2000-3000 degrees, he advocates the use of building material capable of resisting such temperatures. In his opinion, steel armor-plate protection for roofs would further decrease the vulnerability of the modern city against incendiary bombs.

FRANCE—*Revue des Forces Aeriennes*—July, 1933. "Military Aviation in Russia." General Information.

The construction program of Soviet Russia for 1932 comprized 913 airplanes, 16 dirigibles and 16 captive balloons. By 1935 the Soviet government contem-

plates having a total of 5000 airplanes organized into 62 air regiments.

According to Swedish sources Soviet Russia actually had in commission at the beginning of 1932 a total of 2000 airplanes, including 800 reconnaissance planes, 400 bombers, 400 pursuit planes and 400 seaplanes.

GERMANY—*Wissen und Wehr*—July, 1933.

"Some Thoughts on the Naval Situation," by Rear Admiral Gadow, retired.

Considering the naval situation of World Powers today, the author discerns three potential danger zones resulting from existing rivalries and clash of interests. They center in the Franco-Italian, the Anglo-French and the American-Japanese relations.

Ten years ago, the author adds, he would have ranked in first place a potential conflict between the United States and Great Britain engendered by the rise of American sea power to a position of equality with that of Great Britain, coupled with the aggressive expansion of American sea-borne trade, and the dominant position of the dollar in the world mart. The determination of Americans to maintain the advantages that had accrued to them since 1916 and their obvious ability to do so, the author states, added gravity to the situation. Owing to the domestic situation and empire interests, however, Great Britain was unable to oppose American ambitions, and she permitted the consummation of the World War debt settlement, and she likewise agreed to the decisions of the Naval Disarmament Conferences of Washington and London without serious opposition.

In time, American insistence upon the Freedom of the Seas became somnolent, and the dash in American naval armaments also subsided to the extent, the author observes, that in the last few years, in spite of heroic efforts, the United States has not been able to keep up its naval strength to the limits set by the London Pact. By 1936, the author holds, the naval establishment of the United States will show a serious shortage in cruisers and destroyers.

As a result of this American apathy in recent years, the rivalry between the United States and Great Britain became latent, although they are still very far from seeing eye to eye. The clash of economic interests between these powers the author notes, is made manifest by the powers of inflation conferred upon President Roosevelt, and the duel actually in progress between dollar and pound.

While a conflict between the United States and Great Britain is a possibility, the author does not regard it as a probability. A British offensive across the Atlantic would leave the action without decisive objective. The United States is virtually self-sustaining, and de-

struction of American sea-borne trade would have little effect upon the outcome of the war. Conveying an army across the Atlantic, the author thinks, is almost impossible, while military operations from a Canadian base would inevitably lead to the loss of that Dominion. Similarly, raids against, and bombardment of, the American coast would prove futile.

The causes of the Franco-Italian rivalry, the author states, are well known. He adds, however, an additional one not usually considered: the natural antipathy of French democracy toward Italian fascism. Comparing the naval strength of the two rival powers, the author observes, that the Italians have gone in for light vessels: capable of very high speed, placing their battleships in reserve. The evident intention, he holds, is to use these fast moving units to prevent the transport of colored reinforcements from the African possessions to France. The French replied by converting the island of Corsica into a Mediterranean Heligoland. In the author's opinion, Italian strategy will depend largely upon aggressive action by naval and air forces while the land forces will largely remain on the defensive. He believes, that the long distance flights by the Italian Air Force are actuated by such policy.

As to the Anglo-French differences the author cites Pitt, who stated that "any continental Power which entertains naval and colonial ambitions will ever be England's enemy." In the opinion of the "Naval and Military Record," the author states, the launching of the "Dunquerque" made France leader in naval armaments. He quotes the "Morning Post," which wrote, that "by 1936, France will have 59 cruisers, England only 50 and but 27 of these will be modern in comparison to 49 of the French. During the war England had 127 cruisers and these proved inadequate. France soon will have 124 submarines with only 28 classed as overage, while Germany possessed only 27 at the outbreak of the World War."

In case of a conflict between Great Britain and France, the author believes, the mission of the British Home Fleet will largely be, to cover airplane carriers in advanced positions seeking to intercept French air raids. He thinks England will probably seek to block the Atlantic ports of France early in a conflict to prevent their use as bases for submarine commerce raiders. This effort, in the author's opinion, will not be altogether successful. In the light of past experience the author does not understand England's rugged adherence to the battleship.

The Japanese-American situation, the author states, is reflected by its constant recurrence in American naval maneuvers. In his opinion, these exercises have amply demonstrated the need for battle-cruisers, and he places the tactical value of these above battleships. But the United States Navy, he observes, is predisposed against this type of vessels and cheerfully sacrificed the "Saratoga" and "Lexington" at the Washington Naval Conference by consenting to their reconstruction into clumsy airplane carriers.

The difficulties involved in naval operations across the Pacific are so great that, in the author's opinion,

the chances of an actual clash between the United States and Japan are very remote, notwithstanding the continued friction in their relations. Japan's demand for naval equality, the author thinks, will become a reality, and there is absolutely nothing the "White" Powers can do about it.

—*Militär Wochenblatt*—July 18, 1933.

"Organization and Tactical Employment of the French Machine Gun Company," by 318.

The French machine gun company consists of company headquarters of two sections: 1. communications and intelligence, 2. supply; and four platoons of two sections with two guns each. The gun commander is a lance corporal. Four men comprise the gun crew. The company has eight ammunition carts.

Machine guns are always used in pairs, never singly. The maximum range of the French machine gun is 4300 meters. It has a rate of fire of 400-500 rounds per minute. The practical rate of fire is only 250 rounds per minute. The gun weighs 24 kg., the tripod 25 kg. It can effectively be used against aircraft at 1000 meters.

The machine gun company of a front line battalion habitually uses direct fire, while the machine guns of rear battalions employ indirect fire. The French consider the ranges between 1000 and 1500 meters most effective for direct fire, although good results may be obtained up to 2400 meters. The platoon is normally employed as a unit, and the guns are, as a rule, so placed that the platoon commander can effectively control their fire by word of command. The two guns of a section are never emplaced closer than 15 meters.

Machine guns are not permitted by the French, the author states, to fire upon any target within 500 meters, nor are they allowed to lay down a band of fire closer to their own than 200 meters. The French regard observed fire at ranges in excess of 2400 meters impracticable. Machine guns employing direct fire are generally emplaced 500-1000 meters behind the front line. As a consequence the combined fire of these guns covers the zone situated from 500 meters to 1200 meters in advance of the front line.

The author believes that the French plan of employing machine guns permits the attacker to approach the defensive line to a distance of 1200 meters without encountering serious opposition. At 1200 meters, however, the attacker would come under the overwhelming fire power of the defense. Only by taking full advantage of the terrain can the attacker hope to keep down his casualties. In this connection the author points out, that normally the French employ single guns to sweep intermittently the terrain to their front. Since the lateral dispersion of the machine gun equals about 1/10 to 2/10 of the range, or 200 to 500 meters, the author concludes that the probability of hits is actually small during this type of fire. But, he adds, as soon as the French discover a paying target, they put in action as many guns as may be necessary for its destruction. Hence the attacker must endeavor to

make his advance skillfully, taking full advantage of the terrain to mask his movements, and above all, he must avoid presenting to the enemy conspicuous targets.

—*Militär Wochenblatt*—September 11, 1933.

"Japanese Imperialism," by "B. B. Z." 387/33

General Araki, Japan's Minister of War, and regarded by many as the spokesman of the Japanese Army if not of Japanese Militarism, recently published a pamphlet under the title: "Japan's Way," in which he endeavors to justify Japan's military policy on the mainland of Asia. General Araki defends the view that it is Japan's mission to restore order wherever necessary on the Continent of Asia. He states that Mongolia is neither Russian nor Japanese, nor is it an independent state. It is, however of great strategic importance to Japan, and according to General Araki, his country does not intend to allow Russia to use it as a jumping board for future military operations. He summarizes Japan's mission in Asia in the single word "kwodo" which, according to the reviewer means "the imperial way," that is to say, the way which the people of Asia must follow under the leadership of Japan.

General Araki writes, that the masses of Asia are the victims of oppression and exploitation by the white race, and that awakened Japan can no longer tolerate the arbitrary attitude of the countries which have been exploiting the people of Asia. It is Japan's moral duty, General Araki states, to oppose any power, no matter how great, which violates the political and moral precepts of "Kwodo."

HUNGARY—*Magyar Katonai Szemle*—August, 1933.

"Influence of Battlefield Conditions upon Marksmanship," by Major Laszlo Keler.

Target range experience shows, the author states, that the fire of a squad of riflemen is more effective against small and scattered targets at short and mid-ranges than either the automatic rifle or machine gun. Against inconspicuous moving targets exposed for only a few moments the automatic rifle is more effective, while against other targets, and at long and extreme ranges the machine gun produces the best results. While the slight dispersion of the rifle enables the trained marksman to obtain excellent results under the favorable conditions of the target range, the author notes that these conditions do not prevail upon the battlefield, hence we cannot expect the same results. Moreover, on the battlefield, the author adds, we are not likely to have the same well-trained personnel. As a rule, the training of the soldier in time of war is limited to a few weeks at the best. Fatigue, battlefield impressions, the effect of hostile fire and a variety of other causes affect the rifleman to a variable extent until at some stage of the battle the actual dispersion extends from the muzzle of the rifle to its extreme range. The author observes that nervousness produced by the most trivial cause will seriously influence the effectiveness of the fire of the best rifleman even on the target range. It can hardly be expected of the average man that he will remember the lessons

of marksmanship taught him hurriedly during the short period of training which preceded his entry into action. This fact emphasizes the importance and necessity of marksmanship training for boys.

In the author's opinion, the fire of automatic rifles is not affected to the same extent as that of rifles. This is largely so because automatic weapons are as a rule entrusted to the well trained older soldiers. Moreover, the construction, the manner of holding the automatic weapon as well as the use of bipods and stock-supports have a tendency of steadying their fire and prevent excessively high shooting. Nervousness, of course, will affect the effectiveness of the auto-rifleman just as adversely as the rifleman. The great advantage of the machine gun, the author states, rests upon the fact that its mechanical fire is not sensitive to the moral and physical condition of the gunner. It is capable of sustaining a fairly accurate and effective fire even though hostile fire has rendered ineffective or even silenced the rifleman or auto-rifleman. It is for this reason that the machine gun has become during the World War the infantryman's most powerful and most feared weapon.

SWITZERLAND—*Allgemeine Schweizerische Militärzeitung*—June, 1933.

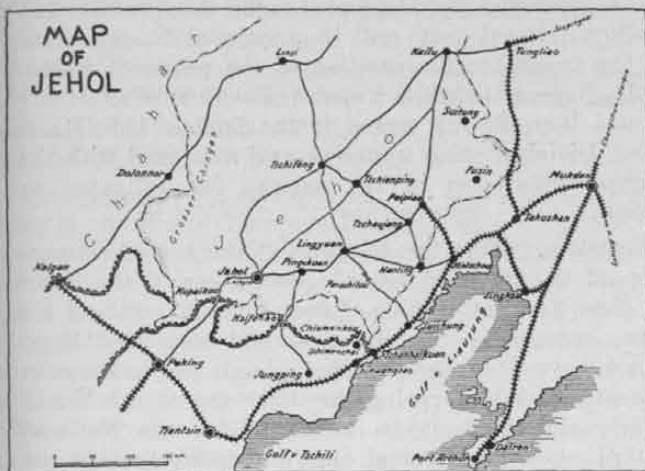
"The Jehol Campaign," by Major Otto Mossdorf.

In January, 1933, the Japanese forces in Manchuria consisted of 4½ divisions (9 brigades), 2 cavalry divisions and 6 railway guard battalions. Of these, 2 divisions, 1 cavalry brigade, air, tank, motor and special units participated in the Jehol campaign under the command of General Muto, commander-in-chief of Japanese forces in Manchuria. Lieut. Gen. Kunihiro Koiso was chief-of-staff.

The character of the terrain and available road net practically determined the plan of campaign. Although a winter campaign in that region entailed additional hardships, the Japanese High Command, nevertheless, decided in its favor because of the impassable condition of highways across the mountain passes for modern transportation during the warm season. Moreover, as a result of previous experience, Japanese troops were inured to the hardships of winter warfare.

The Japanese estimated the enemy strength at 200,000 composed largely of volunteers of little military value. The regular troops under General Tang Yu-lin, governor of the province, amounted to about 30,000 men. There existed of course the possibility of strong reinforcements coming into the province from the south and west. It was obviously with that possibility in mind, the author notes, that the Japanese Note of February 21, 1933, to the League of Nations, referred to the menace of 487,000 Chinese troops to the state of Manchukuo which compelled the Japanese to resort to arms. The same consideration prompted the Japanese to seize Shanhaikwan and the Chienmenkou Pass. The Japanese refer to these operations merely as "incidents," yet the capture of these two points secured the Japanese left flank during the subsequent operations in Jehol.

At the beginning of the offensive the Chinese situation was briefly as follows: detachments of volunteers, designated by the Japanese as "bandits," held the eastern frontier. They were reinforced by some cavalry at Kailu. The triangle Peipiao-Tschaujang-Nanling, barring the principal approach to the provincial capital, was held in force. (note: the author's spelling is retained without change to the accepted English form in order to facilitate reference to sketch). The three main lines of defense were: 1. Tschifong-Lingyuan; 2. Pingchuan-Hsifenkou;



and 3. Just east of the City of Jehol. The Chinese forces were under the supreme command of General Tang Yu-lin.

The Japanese 6th Division sent the 11th Brigade to advance with the 4th Cavalry Brigade via Kailu on Tschifong and Tschienping, while the 36th and 4th Brigades made the main effort by advancing on Peipiao. The 14th Brigade, advancing from Suichung in the direction of Paitschitzu Pass, had a flanking mission.

On January 19 Japanese aviators bombed Tschanjang. Small detachments crossed the frontier on the following day. The Chinese garrison of volunteers at Kailu was decisively defeated on January 28. About the beginning of February the Nanking government began to take active interest in Jehol affairs and sent 3000 reinforcements into the province. On February 6, the Japanese bombed Peipiao.

On February 21 General Muto issued his formal attack orders for the following day. In face of the determined advance of the Japanese the Chinese defense collapsed completely. The author states that the volunteers in the advanced positions did relatively better than the regular troops assigned to the main lines of defense. The Japanese captured both Peipiao and Nanling on February 22. Intelligence reports in course of the advance located the Chinese Fifth Army of 45,000 men in the vicinity of Lingyuan.

On February 24, the Japanese delegation withdrew from the League of Nations after 42 out of 44 states

represented had voted against Japan. As the campaign progressed, the Chinese defending force was materially weakened by mass desertions to the enemy. On the other hand, the Japanese found their Manchukuo allies equally undependable. After the desertion of General Yang Yin-po to the Chinese, the Japanese High Command withdrew all Manchu troops to the second line.

On March 1, first anniversary of the establishment of Manchukuo, the Japanese occupied Tschifong and Lingyuan. Again, the author states, Japanese success was in large measure due to the defection of Chinese troops. The desertion of a battalion on the Chinese right flank enabled the Japanese to advance rapidly and to cut off two Chinese brigades, whereupon the remainder of the Chinese Army quit the field in abject flight. The Japanese overran the Chinese positions at Pingchuan and opened the way to the provincial capital, Jehol City, which was actually taken on March 5.

On March 6 General Muto returned to headquarters at Changchun and announced the virtual conclusion of the campaign. On March 8 the Japanese installed General Chang Hai-peng as provincial governor and Japanese civil officials, who had followed in the wake of the conquering army, took over the civil administration of the province. March 10 marks the actual conclusion of the military operations in Jehol with the occupation by the Japanese of Kupeiku, which they had purposely left open for a few days, to give all Chinese north of the Great Wall a chance to clear out of the province.

The author quotes General Araki, Japanese minister of war, to the effect, that the advance to the Great Wall marked the completion of the first phase of the Japanese campaign. This, it is believed, indicates further and even more important operations in the offing. The author notes, that the Japanese already talk about the reestablishment of "Ta-Yuan-Ko," the world-wide empire of Genghis Khan.

In the author's opinion, the Japanese plan of operations was well adapted to existing conditions. The Japanese High Command obviously had complete faith in success as indicated by the employment of only one half of their actually available forces for the execution of the plan. The tactics employed in this campaign were tried out during the preceding campaigns. It generally consisted of a rapid and aggressive advance of the infantry immediately after a severe aerial bombardment which seriously shook the enemy's morale. The native population was generally hostile to the Chinese, a circumstance which added to the difficulties of the Chinese forces. As soon as the Chinese withdrew the Japanese took up the pursuit, employing for this purpose comparatively small detachments. The author regards the employment of the cavalry on the extreme north flank as basically sound even though an envelopment actually failed to materialize because of the early collapse of the Chinese defenses.

NATIONAL GUARD NOTES

New Executive Officer Appointed for National Guard Bureau

COLONEL EDGAR A. FRY, Infantry, U. S. A., has been selected by Major General George E. Leach, Chief of the National Guard Bureau, to be his Executive Officer. For the past year Colonel Fry has been head of the division on organization and training in the Bureau. Prior to that he was the senior instructor of the Maryland National Guard, and stationed at Baltimore.

Colonel Fry, was born in Ohio and educated in Kansas. He first entered the military service in 1898, joining the 20th Kansas Volunteers, and then the 36th U. S. Volunteers when the Kansas regiment returned from the Philippines. He commanded the troops of his regiment that were a part of March's Expedition in pursuit of Aguinaldo. He remained in the Philippines to organize and command the First Maccabee Infantry Battalion. It was from the native personnel of this battalion that the expedition was organized which resulted in Funston's capture of Aguinaldo.

Colonel Fry, was serving in China at the entry of the United States into the World War. He returned to this country and joined the 85th Division. He organized and commanded one of the first Central Officers' Training Schools and in 1919 organized and commanded one of the first experimental camps for the training of young men. Ordered to the American Army of Occupation in Germany he reorganized and commanded one of the regiments of the proposed Silesian Brigade. Returning to this country he became Executive Officer of the Infantry School at Fort Benning, Georgia. Completing this duty he then commanded the 5th Infantry, and then was appointed senior instructor of the Kentucky National Guard. After that for five years he was officer in charge of National Guard Affairs for the Fifth Corps Area.

Colonel Fry is on the General Staff Eligible List, having graduated from the Army School of the Line in 1909, and the Army War College in 1923. He has been a director on the board of the INFANTRY JOURNAL for the past two years.



Col. Edgar A. Fry

National Guard Memorial

MAJOR General George E. Leach, Chief of the National Guard Bureau, believes that the Congress should participate in the planning and erection.

As conceived by General Leach, the present day National Guard units will be privileged to contribute to the funds for the erection of the proposed memorial. General Leach is a distinguished veteran of the World War, having served in the famous 42d (Rainbow) Division, being wounded, and accolated with the highest decoration of the nations for gallantry in action.

Speaking before the delegates at the annual convention of the National Guard Association of the State of New York at Buffalo, General Leach outlined his ideas concerning the memorial and stated:—"Memorials have been erected throughout the country in the past decade honoring the deserving of the World War. But there is no memorial for the National Guard. As the National Guard was the first in the war, participating with no less than seventeen divisions, several of which had outstanding combat performances, it seems that the nation as a whole will welcome the privilege of erecting a memorial honoring the sacrifice and valor of the guardsmen. It is my opinion that after all the state conventions have taken appropriate action, and the next annual convention of the National Guard Association of the United States has approved, the matter might well be presented to the Congress for its cooperation in the project."

After consideration of the suggestion made by the Chief of the National Guard Bureau, the Empire State Association adopted unanimously the following resolution:

"WHEREAS, The National Guard of the United States that served in the World War has no memorial erected to its memory at Washington, D. C., or in any other place in the United States;

"THEREFORE BE IT RESOLVED, That this convention of the National Guard Association of the State of New York go on record as favoring the erection of such a memorial to the World War National Guard of the United States at Washington, D. C., and that a copy of this resolution be forwarded to the Secretary of the United States National Guard Association for action at the next convention."

The officers and men of the National Guard played an outstanding role in the World War, participating with valor on all fronts, and achieving the prestige of being dependable combat troops. Among National Guard divisions in the World War were:—The famous 42d (Rainbow) Division, comprising a cross-section of guard units from all parts of the United States; the

26th (Yankee) Division from New England; the 27th (New York) Division from New York; the 28th (Keystone) Division from Pennsylvania; the 29th (Blue and Gray) Division from New Jersey, Virginia, Maryland and District of Columbia; the 30th (Old Hickory) Division from Tennessee, North and South Carolina; the 31st (Dixie) Division from Georgia, Alabama and Florida; the 32d (Red Arrow) Division from Michigan and Wisconsin; the 33d (Prairie) Division from Illinois; the 34th Division from Nebraska, Iowa, North and South Dakota, and Minnesota; the 35th Division from Missouri and Kansas; the 36th (Texas) from Texas and Oklahoma; the 37th (Buckeye) Division from Ohio; the 38th (Cyclone) Division from Indiana, Kentucky and West Virginia; the 39th (Cactus) Division from Arkansas, Mississippi and Louisiana; the 40th (Sunshine) Division from California, Colorado, Utah, Arizona and New Mexico; and the 41st (Sunset) Division from the far western states.

The approximate strength of the National Guard prior to the World War was 120,000 officers and men. Mexican border service in 1916 greatly aided the training; and the necessary expansion of the World War had a firm foundation. Today the National Guard is recognized as an established part of the community structure and occupies a popular place in the scheme of national defense. The present strength is 190,000 officers and men, and owing to the reduced strength of the Regular Army the country is forced to depend on the National Guard as its first line of defense.

Farewell Dinner by Brother Officers to Executive of National Guard Bureau

TO the chant of "Old Soldiers Never Die," the officers of the National Guard Bureau, War Department, gathered around the banquet board at the Army and Navy Country Club, Arlington Va., on Wednesday night, September 20, 1933, in a farewell dinner to Colonel William H. Waldron, Infantry, U. S. Army. Colonel Waldron has just completed four years service as Executive of the National Guard Bureau, and has been ordered to the duty of Chief of Staff of the 100th Division, Organized Reserves at Huntington, West Virginia.

Major General George E. Leach, presided. The speakers of the evening reviewed the splendid record of Colonel Waldron as Executive of the National Guard Bureau. Colonel A. Owen Seaman, led the choir.

Colonel Waldron was born June 28, 1877, and entered the Army in June, 1898, from West Virginia. He served in all grades, attaining the rank of Colonel May 7, 1924. He served in the Spanish-American War, the Philippine campaign of 1900, and the Boxer Rebellion in China and the World War, as Chief of Staff of the 80th Division. He has been awarded the Distinguished Service Cross, and the Distinguished Service Medal, and is a member of the initial General Staff list. He is a distinguished graduate Infantry—Cavalry

School, Class of 1905, and graduate of the Army War College. He was Editor of the INFANTRY JOURNAL from 1919 to 1924, and is the author of hundreds of articles on military subjects, as well as the author of recognized military textbooks such as: *Scouting and Patrolling*, *Tactical Walks*, *Company Administration*, *Elements of Trench Warfare*, *Platoon Training*, *Army Physical Training*, *The Old Sergeant's Conferences*, *Military Signalling*, *Reserve Officer's Examiner*, and many others.

Colonel Waldron left the National Guard Bureau on September 28, for his new station.

Colonel Waldron's successor is Colonel Edgar A. Fry, Infantry. Colonel Fry reported to the National Guard Bureau February 1, 1932, and was designated Chief of Operations Section, for which his previous tour of duty as senior instructor of the Maryland National Guard was an excellent preparation.

Guard-O-Grams

General Leach Addresses the War College

On October 12th Major General George E. Leach, the Chief of the National Guard Bureau, addressed the Army War College on the subject of "The National Guard and National Defense."

The National Guard Convention

The annual convention of the National Guard Association of the United States was held at Chicago, Sept. 28-30. Details of the work accomplished will be given in the next issue.

The program included addresses of welcome by the Lieutenant Governor of Illinois, the Mayor of Chicago, and a speech by the Chief of the National Guard Bureau. Entertainment included the impressive trooping of the colors by the Essex Scottish Regiment at the Century of Progress Exposition, and a dinner and pageant by the 33d Division at the armory of the 124th Field Artillery featuring the mounted band of the Chicago Black Horse Troop.

The item of outstanding interest in General Leach's address was his report on the motorizing of the horse-drawn artillery of the National Guard.

Professional Reading for National Guard Officers

During September, the National Guard Bureau issued a press release for all National Guard magazines on the subject of professional reading.

The type of reading suggested was exclusive of technical works and included only books of a character designed to broaden the horizon of officers or those of a recreational nature which contain valuable military ideas. Some of the works mentioned were *The Defence of Duffer's Drift*, Captain von Schell's *Battle Leadership*, *A Summer Night's Dream*, Ardan du Picq's *Battle Studies*, Spenser Wilkinson's *The French Army Before Napoleon*, and Douglas Johnson's *Battlefields of the World War*. Kipling's poems and Leonard Nason's stories were also recommended.

Service Bands on Guidons

THE National Guard authorities of New York have issued an amendment to the State regulations, which permits bronze bands to be placed on the staffs of unit guidons to represent state or federal service under certain conditions. The amendment reads:

"(2) Guidons. In addition to the silver bands authorized by the War Department, guidon-bearing organizations may attach to staffs of guidons bronze bands to represent any service credits earned either in the service of the United States or the State, while a separate unit not attached to a regiment or equivalent command or as part of an organization from which it has since been separated."

Thus, if a unit is called out for State duty as a separate outfit, it would be entitled to a band on its guidon to represent such service. This plan gives suitable recognition for service and will be much appreciated by those units who have rendered such service to the commonwealth in the past, for the new order is retroactive.

It is understood that some of the other states are considering the matter of adopting the New York plan in their system of awards for service. All of these things help to promote *esprit de corps* and are worthy of consideration.

The 246th Coast Artillery (HD) at Fort Monroe

THE Adjutant General of Virginia, directed that the 246th Coast Artillery, (HD); Virginia National Guard, report to Fort Monroe, Va., on August 13 for its annual Field Training. If the word *assemble* had been used, it probably would have been more appropriate, because of the wide distribution of the home stations of the various organizations of the regiment.

In order that all organizations might get settled in camp on Sunday, the 13th, and be ready to start work on Monday, the units farthest away had to leave their home rendezvous on Saturday evening. All organizations arrived fully equipped, in excellent order, and with only two enlisted men absent who had authority to do so. Train Commanders had no complaints from railway officials.

Artillery drills started at 7:00 A. M., and continued to 11:00 A. M., daily except Saturday and Sunday. Infantry drill and Guard mounting were held at 11:30 A. M. The afternoons were devoted to officers' schools, noncommissioned officers' schools, ceremonies, athletics and small arms firing, while some organizations conducted artillery drill. During the first week most of the small-arms firings were completed since only the instruction practice, Course D, was authorized to be fired, and there was no ammunition allowance for firing the pistol. The batteries completed their preliminary training in tracking targets and fired their allowances of subcaliber ammunition.

Record practice for all batteries was scheduled for

Monday and Tuesday, August 21st and 22nd, but due to inclement weather only Battery F, manning 10" guns could fire on Monday. Tuesday morning was very hazy and visibility was fair for about 10,000 yards. This made it necessary to fire 12" mortars, manned by Batteries A and B, since there was no fear of ricochets. By afternoon the tropical storm which had been forecast by the Weather Bureau began to arrive in earnest at Fort Monroe and the high winds and poor visibility prevented further firing.

During Tuesday night, August 22nd, the wind reached a velocity of 68 miles, with a pouring rain. Before daylight the tide began to rise over the first floors of the buildings in Camp 2, so organizations began to move their property to the second floor. At 6:30 A. M., when the tide was about 4 feet above normal high tide, the cantonment barracks were evacuated and the regiment moved into permanent barracks inside the post, where the men remained until the next afternoon. The tide reached its highest point, 9.4 feet, about 9:30 A. M., after which the wind changed, and by 5:00 P. M., the tide again was at its normal height.

Too much cannot be said for the hospitable manner in which the officers and men of the regular army looked after the regiment. They not only fed and housed the men but furnished dry clothes, since most of the men had waded in water almost up to their necks leaving Camp 2. The storm ended the military field training of the 246th C. A. for the year 1934., due to the damage to communication system and observation stations. It is hoped that authority will be granted to those batteries who did not fire this year to fire two practises at the next annual encampment. Valuable experience was obtained in policing camp, checking property, and otherwise getting settled after a storm.

Few men in the camp would have missed this storm, although at one time it appeared that there might be some disastrous results especially when two-story buildings began to float. Organizations of the regiment entrained Saturday night and Sunday morning for their respective homes, feeling that although they had been prevented from completing their military training, they had had a wonderful time.

Field Training of 203d Coast Artillery (AA), 1933

"A IR raid thrills and thousands go to Swope Park to see peace-time version of war spectacle *** the stars looked down last night upon a vast crowd in Swope Park and the crowd looked back at the stars. Somewhere, between the two, a solitary airplane was humming * * * as the plane passed high over the woods at the north of the park, three thick, smooth shafts of brilliant blue light sprang up from the dark earth. Lieutenant Frank T. Dunn of St. Louis, the pilot ducked down in his cockpit and flew blind, reading his course on his dimly lighted dials. The blue

rods of light groped across the stars, then back. The eyes of the 203d Coast Artillery (AA), Missouri National Guard, were searching for him with the light of one billion candles. One gigantic searchlight, with a face like a blue sun, was looking up from the commons near the shelter house. Another was looking up from the regiment's camp near the lagoon and a third glanced up from a hilltop near the bridge at Gregory road. The radiance was blinding. Dunn dared not look down. A rod of light touched a tip of his wing and hesitated. In another instant it had caught the ship in its full beam and turned it into silver. The other groping shafts darted back triumphantly. The silent crowd below stirred with excitement as the three beams fell upon the quarry and captured it, high in the black sky for the waiting guns.

"A flash of red quaked against the blackness. Boom! An antiaircraft gun, mounted on the parking of Meyer Boulevard, bayed like a lean black hound. From the hill near the bridge another hound bayed. From the greens near the lagoon, a dozen machine guns, mounted on field-gray trucks, began to clatter like wagon spokes upon a concrete pavement. Another gun boomed, its echoes splashing against the dark hills. Boom! Boom! The red flame at the muzzle stabbed the night.

"That was war—the most beautiful part of war. That was one of the spectacles which World War veterans have described as 'an experience I wouldn't take a million dollars for.' There it was—common property. Uncountable thousands of peaceful Kansas City folks were witnessing an air raid by night, the attack and the defense. Lt. Dunn was representing the Air Corps of the 35th Division. He was the enemy. The 203d was waiting for him with searchlights, guns and machine guns. The thousands at Swope Park were guests of the 203d, which did the best it could, considering safety and appropriations. The regiment usually practices in Florida, where its gunners can fire at aerial targets towed behind airplanes. The administration cut the railroad fare from the budget. The regiment, in camp for two weeks at Camp Clark, Nevada, Mo., came to Kansas City for a hike and put on the show to pay its hotel bill at Swope Park."

The above is not a Jules Verne version of the Field Training of the 203d Coast Artillery (AA), but is the way thousands of Kansas City civilians saw part of the training thru the eyes of a crack reporter, who does the front-page columns for the *Kansas City Star* and *Times*. This great metropolitan newspaper later made the 203d Coast Artillery (AA) the subject of a very serious and complimentary editorial.

Advertising? Yes, if you please, but why not? The National Guard belongs to the people and depends upon them for its existence, so it was felt, in these times of apathy and antagonism in certain quarters, that it might be a good idea to bring home to the tax payers that the National Guard is a most essential part of the Army and that they are getting more than their money's worth out of it. It is believed that the 203d did its part in making friends and supporters for the future. The whole idea of the camp

this year was not to advertise and "put on a show," however. Real training was not overlooked. The regiment concentrated by motor trucks of the vintage of 1917 and, without a single serious difficulty, put in two weeks' training on motor convoy problems, tactical exercises and air raid problems in camp and en route. The surprising thing of all was that these old trucks will still function, but they do.

Year after year the regiment has fired its target practices at Fort Sill, Oklahoma, Fort Sheridan, Illinois, and Fort Barrancas, Florida. Its batteries have always secured enough "Excellent" ratings to keep the regiment towards the top of the regiments of the country. It was no wonder, for instance, that Battery A with its score of 114.8 (ranking first of all searchlight batteries of the entire National Guard Antiaircraft regiments) at Fort Barrancas, Florida, in 1932, was able to go to the big city and put on such a spectacular and satisfactory exhibition, in an off-year when there was no money for ammunition or railroad fare.

Next year, if there is sufficient appropriation, the regiment hopes to go to Fort Barrancas and fire its accumulated allowance of ammunition. But, if not, it will again try to hike to some large city of Missouri and carry on its good-will mission.

The 666-Mile March of the 251st Coast Artillery (AA)

ON August 5 of this year the 251st Coast Artillery (AA), California National Guard, Lt. Col. H. H. Moorehead, commanding, 100 per cent strong (29 officers and 381 enlisted men) with eight reserve officers attached for training, began the first leg of a 333-mile march under its own power from San Diego to Camp San Luis Obispo. In previous years the Regiment has trained at Fort MacArthur, San Pedro. This year it was authorized to hold its encampment at the National Guard Training Camp, San Luis Obispo, and to move with its own motor transportation.

The experiment was an unqualified success.

The 1st Battalion left San Diego at 4:00 A. M., August 5th. Its convoy of 67 motor vehicles reached Long Beach by 3:00 P. M., on schedule and in good condition. There it joined the 2d Battalion which had moved into camp there at 9:00 A. M. At the Long Beach camp a tactical problem for machine guns was held.

The next day, Sunday, August 6th, the 2d Battalion moved out at 5:00 A. M. followed by two more echelons at intervals of ten minutes. The total length of the column was in excess of three miles. The first echelon reached Seaside Park, Ventura, exactly on time at 2:00 P. M. Here the program called for a day's halt which was spent in drilling, instruction in chemical warfare, a track meet, guard mount, and a regimental review for Adjutant General Seth E. Howard. A dance given by the Chamber of Commerce in honor of the visiting regiment brought the eventful day to a close—or, rather ushered in a still busier day.

On Tuesday, August 8th, reveillé sounded at 2:30 A. M., and the first echelon was on the road at 4:00 A. M., headed for Buellton, 88 miles away. After a completely successful passage of Gaviotta Pass the head of the column reached its camp site as usual exactly on scheduled time at 2:00 P. M., and with the temperature above 100 degrees, went into bivouac sharing their dusty blankets with the tarantulas and lizards.

After a hard night's tour of duty on bunk fatigue the Regiment moved out at 5:30 A. M. on the 9th, and at 2:00 P. M. the leading element passed the gates of Camp San Luis Obispo having completed its 333-mile trek with a perfect score for punctuality. There it was met by Col. Daniel W. Hand, Officer in Charge of National Guard Affairs for the Ninth Corps Area, and the Regular Army Inspectors, Major J. D. MacMullen and Capt. L. E. Spencer. Battery B withdrew from the column and emplaced its guns in the sand at Morro

Bay, while other units reconnoitered the area for training purposes.

The training period was full of incidents. The return trip was one continual series of practices. During the march 27 miles of field wire were strung and the switchboard was set up and taken down no less than 20 times. The radio sent and received about 100 messages without a single equipment failure. In camp has about 30 miles of wire in operation at one time. Station W6JFQ, which first got word of the Long Beach earthquake to the War Department, operated throughout the march and camp from a station on wheels.

On the return march about 8:00 P. M. on the 15th a 40 mile wind blowing through Gaviotta Pass tore up about 30 pup tents and whirled them into the surf. Apart from that a happy and instructive—if strenuous—time was had by all.

COAST ARTILLERY ORDERS

Colonel Edward Carpenter, retired October 31, on account of disability.
Colonel Homer B. Grant, from Hawaii to 9th Corps Area, Presidio of San Francisco.

Colonel Ralph M. Mitchell, from recruiting, Cincinnati, to 14th, Ft. Worden.

Colonel Frederick W. Phisterer, retired, September 30, on account of disability.

Lt. Col. Joseph A. Green, from 61st, Ft. Sheridan, to General Staff, Ft. Sam Houston.

Lt. Col. Walter Singles, Washington, D. C., ordered to appear before Army retiring board.

Lt. Col. James B. Taylor, home to await retirement.

Lt. Col. Benjamin H. L. Williams, from Ft. Mason, to the Philippines, sailing November 23, revoked.

Major Edward B. Dennis, from 10th, Ft. Adams to Org. Res. 1st Corps Area, Providence.

Major Charles A. French, from New Bedford High School, New Bedford, to Harbor Defenses of Narragansett Bay, Ft. Adams.

Major Robert C. Garrett promoted Lt. Col. October 1.

Major John P. McCaskey, Jr. from Org. Res. 1st Corps Area, Providence, to 10th, Ft. Adams.

Major Otto H. Schrader promoted Lt. Col. October 17.

Major Edwin B. Spiller, from 6th, Ft. Winfield Scott, to Org. Res., 7th Corps Area, St. Louis, Missouri.

Major Robert W. Welshmer promoted Lt. Col. October 1.

Captain George Blaney, from Panama to 9th, Ft. Banks.

Captain Benjamin Bowering from 62d, Ft. Totten to instructor, New York National Guard, Second Corps Area.

Captain John S. Crawford, resigned.

Captain Albert M. Jackson, from 62d, Ft. Totten to Coast Artillery representative, Engineer Board, Ft. Humphreys.

Captain Percy S. Lowe, from 6th, Ft. Winfield Scott, to 11th, Ft. H. G. Wright.

Captain LeRoy Lutes promoted Major September 1.

Captain Erwin A. Manthey, Washington, D. C., ordered to appear before Army retiring board.

Captain Howard H. Newman, Jr., to 52d, Ft. Monroe upon completion of foreign duty, revoked.

Captain James F. Pichel, from Detroit high schools, Detroit, to 14th, Ft. Worden.

Captain George T. Rice, retired, October 31, on account of disability.

Captain Edward H. Taliaferro, Jr., from Omaha, to Fort Leavenworth, for duty assistant quartermaster.

1st Lt. Russell E. Bates, from Michigan State College of Agric. & Applied Science, East Lansing, to 62d, Ft. Totten.

1st Lt. Wilbur R. Ellis, from 2d, Ft. Story to Quartermaster Corps, Philadelphia, November 7.

1st Lt. John M. England, from Panama to 11th, Ft. H. G. Wright.

1st Lt. Paul W. George promoted Captain September 1.

1st Lt. Donald D. Lamson, relieved from detail in Signal Corps, Brooklyn, to 62d, C. A., Ft. Totten, effective January 31.

1st Lt. Howard H. Newman, Jr. promoted Captain September 1.

1st Lt. Clarence E. Rothgeb, from Hawaii to 51st, Ft. Monroe.

1st Lt. Joe F. Simmons, from Panama, to 2d, Ft. Monroe.

1st Lt. John A. Weeks promoted Captain August 28.

1st Lt. Austin M. Wilson, Jr., from 69th, Ft. McClellan, to 51st, Ft. Monroe.

1st Lt. Nevins D. Young promoted Captain September 1.

2d Lt. Carl E. Berzelius, CA-Res. promoted to 1st Lt. CA-Res., October 31.

2d Lt. Ethan A. Chapman, assigned to 62d, Ft. Totten, sailing on first available transport for Panama. Previous orders revoked.

2d Lt. Roy K. Kauffman, transferred from 6th Inf., Jefferson Barracks, to 61st C. A., Ft. Sheridan.

2d Lt. Leland L. Stokes, CA-Res. promoted 1st Lt. CA-Res., September 15.

2d Lt. William M. Talbot, from 69th, Ft. McClellan to Signal Corps, Ft. Monmouth, November 1.

1st Sgt. Emil Gongol, 16th, Ft. Ruger, retired, October 31.

1st Sgt. Carl Harrington, 6th, Ft. Winfield Scott, retired, October 31.

1st Sgt. Arend R. Huls, 59th, Ft. McDowell, retired, October 31.

1st Sgt. Frank Kincaid, 9th, Ft. Banks, retired, September 30.

1st Sgt. Charles S. Thompson, 59th, Ft. McDowell, retired, October 31.

Staff Sgt. Rufus L. Gardner, 61st, Ft. Sheridan, retired, October 31.

Staff Sgt. Claude F. Geiger, 13th, Ft. Barrancas, retired, September 30.

Sgt. Clyde Herriman, 1st, retired, Ft. Randolph, September 30.

Private Samuel A. Clough, 11th, Ft. H. G. Wright, orders revoked.

BOOK REVIEWS

MY BATTLE, by Adolph Hitler, abridged and translated by E. T. S. Dugdale, Boston and New York. Houghton Mifflin Company. The Riverside Press. Cambridge, 1933. 400 pages. Price \$3.00.

Owing to the position now occupied not only in Germany but in the world at large and also owing to the many and varied accounts of his antecedents and training, the autobiography of Herr Hitler comes to the English speaking people at a most opportune time.

In such books one of ten looks for propaganda but it is doubtful if any exists in "My Battle." In fact, the publisher states in his "note" that the book "was written not as propaganda for foreign consumption, but for the instruction and guidance of those already committed to his movement." The publisher also states that in this book, "the actual head of a great European State, tells the story of his life, traces the growth of his social, economic and political philosophy and states both his aims and his methods." It should also be observed that a good deal of the book was written in 1924 while he was confined in the Fortress of Landsberg am Lech after the unsuccessful uprising in Munich the previous year. This of course was years before he attained any power and also probably long before he expected to be in any position sufficiently strong to dictate to the German people or to in any way influence other nations.

It is believed that the American public wants answers to the following questions, viz: Who is this man? What are his antecedents? What was his walk in life, his education, and above all how did an obscure Austrian become what is practically the Dictator of Germany?

But even with his book before us it is difficult to give complete answers. This is undoubtedly because the book is an English version, somewhat abridged, the original containing eight hundred closely printed pages while the book now offered to American readers contains but two hundred and ninety-seven.

In the English book however is a chronological list giving "Important Dates in Hitler's Career." From this list we learn that he was born April 30, 1880 in Braunau, Austria; that his father was an Austrian patriot and his mother a Bohemian from Prague; that he spent his childhood in Lambach, Austria; that at the age of fourteen he went to Vienna where he was employed as a builder's helper; that at the age of twenty-three he leaves Vienna for Munich where he worked as carpenter, architect's draftsman, and painter in water-colors; that he enlisted as a private in the German Army August 3, 1914 and served throughout the War getting to be a Lance Corporal and being awarded the Iron Cross; that in 1916 he was wounded and in 1918 gassed and temporarily blinded; that upon being discharged from the hospital in 1919 he entered politics by joining the German Workers' Party; and that from

that date to January 30, 1930, when he was appointed Chancellor of Germany, the list shows him to be coming more and more prominently before the German people.

For instance it appears that he was instrumental in adopting the swastika as the party emblem; that he changed the name of the "German Workers Party" to "National Socialists" and that he organized the "Storm Troops."

The book contains little or no record of his education. He apparently is self-taught, and in this respect, the English version is apt to be misleading as the translation is done by a far more scholarly man than it was possible for Hitler to become. Although born an Austrian subject his birthplace was near the German frontier and as a child he developed an intense loyalty to the German race of which he considers himself to belong.

His father was an official of some sort and the family lived comfortably until the death of the father and mother. The mother's final illness had nearly exhausted their means and at the age of fourteen Hitler was forced to earn his living and went to Vienna for that purpose.

Then his astonishing career began. At once he noted that in the Austrian capital, 'amazing riches and degrading poverty were mixed together in violent contrast,' and he himself had to struggle.

During these hardships he "perceived clearly that the social task may never consist of welfare work, which is both ridiculous and useless, but rather in removing the deep-seated mistakes in the organization of our economic and cultural life which are bound to end in degradation of the individual."

He became more and more interested in social conditions, and as his own living condition improved he had more time to devote to a study of what he terms Social Democracy into which camp, as he states, the workers owing to their poverty were eventually driven.

He soon saw however "that Social Democracy realized the immense importance of the trades-union movement" which gave it the instrument for assuring its success.

He then tells us that "in the course of a few decades, under the expert hand of Social Democracy, the trades-union movement grew from being the means for protecting the social rights of men into an instrument for laying national economies in ruins" and "with each succeeding year it fell more and more under the influence of Social Democratic politics and ended by being used as the battering-ram for the class war."

And finally, this man, although growing up among the working class, decides that the "trades-union" organization "turned the idea of Democracy into a re-

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pellent and derisory phase, brought shame to liberty and revoked at brotherhood in the: "If you won't join us, we will crack your skull for you."

A thought by the way which might find application in the United States.

Then comes the reasoning which led him "to feel but little enthusiasm for popular representation" and to prefer the control of a few true leaders or the application of what he calls the "aristocratic principle in nature."

Another interesting phase of the book is his description of the origin and growth of his intense if not fanatical antipathy toward the Jews. It was a most gradual growth. He becomes convinced; that they are the leaders of Social Democracy; that they serve themselves only; that they evaded their military duties and that they have no loyalty to the government of the land in which they live.

In the final analysis of his attitude he states "Thus did I now believe that I must act in the sense of the Almighty Creator; by fighting against the Jews I am doing the Lord's work."

The rise of this remarkable man to power was apparently due to his eloquence, to his great personal magnetism and also to his preaching a philosophy and a form of government that strongly appeal to a large majority of the present generation of the German people. We find him becoming more and more conspicuous and finally more powerful after each public speech. It should be noted however that his leadership qualities, which he also must possess to an extremely high degree, did not develop until long after the War. Although he evidently had zeal and intense patriotism and served for several years, he did not attain higher rank than that of a Lance Corporal. One thing of vital importance is that he has succeeded in developing to the highest pitch the ever latent military spirit of the German people.

He apparently controls an enormous force. Moreover many of the statements in his book indicate that one of his main objectives is the extension of German territory. Consequently and most unfortunately, the other nations of Europe must continue armed in order to keep the peace.

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THE CRIME OF CUBA, by Carleton Beals. 399 pp., 8 pp. Appendix, 7 pp. bibliography, 24 pp. index. 31 aquatone ill. J. B. Lippincott Co., Philadelphia, 1933, \$3.00. Reviewed by Lt. Col. P. D. Bunker.

This book is timely, and it "tells all." It tells why you can learn more about the present Cuban turmoil in foreign newspapers (including the Canadian) than you can in those published in the United States. Invisible censorship is Mr. Beal's answer.

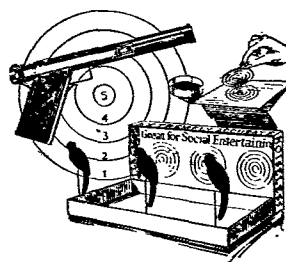
In view of current conditions in Cuba it is well that "The Crime of Cuba" is a best seller; it is well that the citizens of the United States should show such interest in learning the truth about our unhappy sister republic, and it is important that those who might, conceivably, be involved in a "Cuban Intervention" should thoroughly post themselves on the subject.

Starting with the earliest days of colonization, Mr. Beals presents a vivid panorama of the centuries during which this beautiful island has been exploited by the greed and cruelty of those in power. Unhappy Cuba, like some individuals, seems singled out by Fate to play the role of martyr. This trait is sometimes claimed to be a defect in the martyr's own character; the author hints strongly that perhaps the very nature and character of the Cubans themselves is the cause of their present pitiable plight. But only a contributory cause; the main cause is the rapacity of the money powers of New York. In view of recent disclosures of our banking practices, Mr. Beals' indictment of the National City Bank, of the House of Morgan, and of the Chase National and of the support of Machado by Electric Bond and Share (with a resulting cost of from 17 to 35 cents a kilowatt-hour for electricity), these indictments, despite their almost feverishness, are pat and to the point.

But, reading Mr. Beals' book, we see no solution for these intolerable conditions except, possibly, a return to the only government which the author gives a clean bill of health—that of General Leonard Wood and the United States Army. To be sure, Estrada Palma, Cuba's first President, gave it good and honest government; but every other president, a saint before election and promising the Utopian in government has, after election, not only adopted all of the grafting and dishonest practices of his predecessors, but each in succession has thought up new tricks of his own. There seems to be no hope that Cuba will produce a fearless and honest leader such as Ubico of Guatemala, a president whose primary incentive is not graft. Consider, for example, Jose Miguel Gomez, the Cuban president who went into office a poor man and soon amassed a fortune of well over \$8,000,000. He, at least, is not pictured by the author as a creature of the New York banks; he was a product of the 1895 revolt and was inaugurated with widespread acclaim. The inference is natural that, even ignoring the influence of our vested interests, Cuban politics are no cleaner or holier or more free from graft than our own and that, pending the rise of a super-man in Cuba, no appreciable improvement in political conditions can be hoped for.

Mr. Beal's preachment is to the effect that such corrupt men could not have maintained their hold on the reins without the assistance of our Big Business. And that brings on more talk. Big Business must protect itself from predatory politicians; otherwise it will be bled out of existence. But the measures which the author describes are not always of a defensive nature; more often they are genuinely offensive—in both meanings of the word.

In general, Mr. Beals seems entitled to credence. His style, at first, is more "arty" than lucid; his accuracy sometimes suffers from his evident hurry to get his book into the hands of the book-sellers. His comments on military operations are extremely valuable to the professional soldier—not from their sapience or accuracy, quite the opposite. They are valuable in showing how defenseless we are against the ridicule



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and denunciation of a crusading scribe. Verily is the pen mightier than the sword!

None of these defects, if they are defects, detracts from the value of the book, either as a general exposition of causes and conditions in Cuba or as a guide to anyone who might come into contact with Cuban politics. Written, as it was, before the latest revolution in Cuba, it furnishes a much-needed background against which to measure current events in Cuba and in Washington.

== ==

LETTERS FROM ARMAGEDDON. A collection made during the World War by Amy Gordon Grant. With illustrations. Houghton, Mifflin Company, Boston. 296 pp. \$3.50.

The source books for subsequent histories of the World War will range from the official archives of the nations to personal collections of private correspondence such as this. The former will have the authority of governments, the coldness of officialdom; the latter will have the truth of participating witnesses, the warmth of the personal touch.

With the correspondents we are present at the Battle of Mons, the Siege of Antwerp, the Battle of Falkland Islands, the Landing at Gaba Tepe, the Gas Attack

at Ypres, the Battle of Jutland, the maze of the Meuse-Argonne. We take the jump from the doomed Lusitania, wander in London during an air raid, escape from a German prison. All of the different theaters of war are represented in these letters, and most of the warring nationalities. Some marks of the censors are seen and we only wish that some of the letters had been reedited by the writers with forbidden subjects and place-names again included; but this might have destroyed the freshness of viewpoint, and have introduced too much second-sight. This being a collection by a Canadian, the mention of the participation of the United States is slight, most of the letters being of English authorship.

These letters are fascinating, ranging as they do from training camp to firing step to hospital.

== ==

LIBERALISM IN MEXICO, by Wilfred Hardy Calcott, 410 pages. Stanford University Press. Price \$5.00.

The author outlines the history of the liberal movement in Mexico from the acceptance of the Constitution of 1857 to the administration of President Emilio Portes Gil, in 1929. It is an authentic presentation of Mexico's history during that important and tumultuous period of her national existence.

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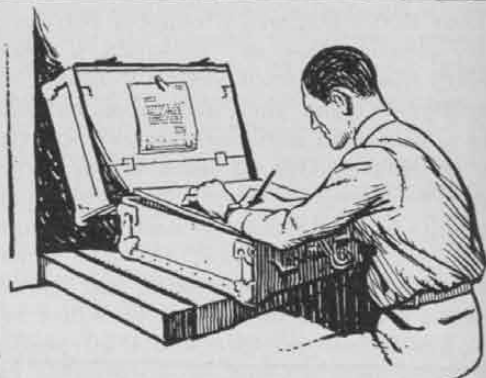
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